

# WASHINGTON COASTAL MARINE ADVISORY COUNCIL MEETING

## AGENDA

**Wednesday, October 2, 2019 9:30 am – 3:30 pm**

Location: Port of Grays Harbor Commissioners Chambers, 111 S. Wooding St. Aberdeen, WA

*Call-in Instructions: Dial 712-770-4598; Access Code: 542294#*

**Coffee and Treats:** Breakfast refreshments will be served at 9:15. Please come early to enjoy them. **The meeting will start promptly at 9:30 a.m.**

Time	Agenda Item (Action items are marked with "1")	Objective (Information, Discussion, Action?)	Presenter(s)
9:30 (15 min)	<b>Welcome &amp; Introductions, Agenda Review</b> <ul style="list-style-type: none"> <li>• Welcome and Introductions</li> <li>• Review agenda</li> <li>! Adopt summary of June meeting</li> <li>! Decide which version of meeting summary is preferred</li> </ul>	<b>Information</b> <i>Reference Materials:</i> <ul style="list-style-type: none"> <li>• Agenda</li> <li>• Draft Meeting Summary—2 Versions</li> </ul>	Garrett Dalan, WCMAC Chair Susan Gulick, Facilitator
9:45 (2.5 hours)	<b>Salmon on WA Coast: An Overview</b> <ol style="list-style-type: none"> <li>1. <b>Panel Discussion</b> <ul style="list-style-type: none"> <li>• Salmon Management and Policy on the WA Coast—Ron Warren and Kayle WDFW</li> <li>• Status of Salmon on the WA Coast—Jeff Davis, WDFW</li> <li>• Hatchery Management and Columbia River Mitigation—Eric Kinne, WDFW</li> <li>• Salmon Recovery Efforts—Erik Neatherlin, GSRO</li> </ul> </li> <li>2. <b>WCMAC Discussion with panel members</b></li> </ol>	<b>Information, Discussion</b> <i>Reference Materials:</i> <ul style="list-style-type: none"> <li>• Discussion of Salmon on WA Coast at Oct. 2, 2019 WCMAC Meeting</li> </ul>	Ron Warren, Kyle Adicks, Jeff Davis and Eric Kinne, WDFW Erik Neatherlin, GSRO Susan Gulick, Facilitator
12:15 (15 min)	Morning Public Comment	Information	Public/Observers
12:30	<b>LUNCH</b>		
1:15 (45 min)	<b>Coastal Updates</b> <ul style="list-style-type: none"> <li>• MRC Updates, Agency Updates, Budget update, MRAC and General Coastal Updates</li> </ul>	Information	WCMAC Members Susan Gulick, Facilitator
2:00 (30 min)	<b>Other Updates</b> <ul style="list-style-type: none"> <li>• Economic Workshop</li> <li>• Technical Committee</li> </ul>		
2:30 (15 min)	<b>WCMAC Workplan</b> <ul style="list-style-type: none"> <li>• Agenda Topics for Next Meeting</li> <li>• Agenda Topics for Future meetings</li> </ul>	<b>Information, Discussion</b> <i>Reference Materials:</i> <ul style="list-style-type: none"> <li>• WCMAC Workplan</li> </ul>	WCMAC Members Susan Gulick, Facilitator
2:45 (15 min)	Afternoon Public Comment	Information	Public/Observers
3:00 (15 min)	<b>Other Issues</b> <ul style="list-style-type: none"> <li>• Reminder of Dates and Times for Future Meetings</li> <li>• Other issues or announcements</li> </ul>	Information	WCMAC Members Susan Gulick, Facilitator
3:30	Adjourn		Garrett Dalan

### Upcoming WCMAC Meetings

- Wednesday, December 11, 2019
- Wednesday, March 25, 2020
- Wednesday, June 10, 2020
- Wednesday, September 23, 2020
- Wednesday, December 9, 2020

*Meetings are held in Aberdeen unless otherwise noted*

# WASHINGTON COASTAL MARINE ADVISORY COUNCIL MEETING

## Draft Summary

Wednesday, June 12, 2019 9:30 am – 3:30pm

Location: Port of Grays Harbor Commissioners Chambers, 111 S. Wooding St., Aberdeen, WA

All meeting materials and presentations can be found on the WCMAC website:

<http://www.ecy.wa.gov/programs/sea/ocean/advisorycouncil.html>

Council Members Present	
Brian Sheldon, Shellfish Aquaculture	Katrina Lassiter, DNR
Corey Niles, WDFW	Larry Thevik, Commercial Fishing
Crystal Dingler, Citizen	Mara Zimmerman, WA Coastal Salmon Partnership
Dale Beasley, Commercial Fishing	Mike Cassinelli, Recreational Fishing
David Fluharty, Educational Institution	Randy Lewis, Ports
Doug Kess, Pacific MRC	Rich Osborne, Science
Garrett Dalan, Grays Harbor MRC	Rod Fleck, North Pacific MRC
Gus Gates, Recreation	Russell Callender, WA Sea Grant
Jay Carmony, State Parks	Sally Toteff, Dept. of Ecology
Jennifer Hennessey, Governor's Office	Tiffany Turner, Economic Development (phone)

Council Members Absent	
Alla Weinstein, Energy	Mike Passmore, Wahkiakum
Jeff Ward, Coastal Energy	RD Grunbaum, Conservation
Joshua Berger, Dept. of Commerce	VACANT, Shipping

Others Present (as noted on the sign-in sheet)	
Bobbak Talebi, Dept. of Ecology	Phyllis Shulman, Ruckelshaus Center
Casey Dennehy, Dept. of Ecology	Steve Marx, Pew Charitable Trusts
Jenny Waddell, NOAA	Susan Gulick, Sound Resolutions, Facilitator
Katrina Radach, WA Sea Grant & TNC	Teressa Pucylowski, Dept. of Ecology
Kevin Decker, WA Sea Grant	Tye Ferrell, Ruckelshaus Center
Marie Novak, Cascadia Consulting, Note-taker	Wendy Largent Hoh Tribe

### March Meeting Summary

- Edits to the March meeting summary: page 6, Jay Carmony to follow up with Crystal Dingler rather than Brian Sheldon about July 4 fireworks as originally noted.
- ! The March meeting summary was adopted with above noted change.

### Coastal Updates

#### MRC Updates

- Pacific MRC plans to host a roundtable on razor clams in early September and a hatchery science conference.
- Grays Harbor MRC funded several projects this year, including loaner life jackets for the marina for kids on small boats, and several port facilities upgrades. They had a presentation from Anthony Odell on harmful algal blooms (HAB) and progress in the ability to accurately forecast events. NOAA wants to develop a national [HAB Bulletin](#).
- North Pacific MRC is planning to host a fall science conference. They hosted an ROV competition to prepare oceanographers for national competition, and held the [Ocean and Rivers Film Festival](#) as part of RainFest.

## Agency Updates

- Representatives from both WDFW and RCO are needed to address WCMAC salmon hatchery and management questions. WCMAC members are interested in adding a fall meeting and prioritizing panelist availability.
- State Parks will hold public meeting for Twin Harbors campground relocation at Westport Maritime Museum, 2201 Westhaven Drive on June 12, 6-7:30 pm. UW and OSU approached them to host high frequency radar as part of the NANOOS network, and they are working on permitting below the jetty at Westport.
- RCO has provided grant funding to redo boat launch parking lot in Westport as well as restrooms, fish cleaning station, and other improvements. They are paving the drive on Firecracker Point out to fish processors, and have a project scheduled in July to add restroom/shower facilities for marina users as well as a recycling enclosure. They opened contracts to dredge the marina (two projects due to size) and are awarding now. Material will go to Firecracker Point as well as other sites, and will occur over the next two dredge seasons, schedule TBD.
- Following the Dept. of Ecology's Vessel Traffic Risk Assessment, they conducted a response capacity analysis and modeling to look at oil spill response capacity in Grays Harbor. Draft study is available [HERE](#) and public comment is open until June 24. The study presents the case for the amount of oil that would be recoverable (available to recover, not recovered) under a certain set of circumstances.
- Governor has declared a drought emergency in Chehalis Basin and twelve other watersheds, which allows Dept. of Ecology to use emergency funds to assist agencies and communities with hatcheries, water rights changes, and drinking water sources. Several junior water rights holders have been notified they are unable to use water for irrigation and recreation lakes until flows are restored to levels required by instream flow rules.
- The Dept. of Ecology and the City of Hoquiam are reviewing Contanda's revised proposal; WCMAC members will be informed when they announce their determination of required environmental review.
- Sally will be leaving the Dept. of Ecology in the summer and the new Regional Director will be in place August 1.
- DNR requested but didn't receive enough capital funding (\$2.5 million) to remove the Hero research vessel that sunk in the Palix River. The ship contains lead and asbestos and will require wastewater treatment before removal.
- DNR is using Marsh Master at 3 Willapa Bay sites to determine if sediment disturbance affects sand shrimp lifecycle.

## MRAC

- MRAC received an appropriation for several projects to research ocean acidification (OA) impacts to salmon, HABs, and forage fish. At April meeting there was discussion around submerged aquatic vegetation, as well as things that weren't funded in legislation, such as geoduck, understanding inputs to rivers, nitrogen cycling, better understanding vulnerabilities, etc. The [LiveOcean model](#) now produces three-day PNW ocean and Puget Sound forecasts. OA Center held a science symposium at UW a few weeks ago and will distribute summary.

## Other Coastal Updates

- Coast Salmon Partnership is entering habitat construction season with federal and state funding. Mara is beginning outreach in local communities related to Coldwater Connection campaign and salmon and steelhead recovery. Contact Mara if you know any groups who would like a presentation.
- WA Sea Grant is partnering with the Dept. of Ecology for a project of special merit award from NOAA to jointly hire a temporary staff person on the coast in Pacific or Grays Harbor County (TBD with community input) focused on resilience projects. Russell will send the announcement to WCMAC members.
- Mayor Crystal Dingler noted that they are seeing distress in Sitka spruce, mostly in wetland mitigation bank. Potential causes include the several recent long, dry summers.

## Ruckelshaus Center COHORT Project

Phyllis Shulman and Tye Ferrell of the Ruckelshaus Center gave a presentation on their study “Options and Considerations for Implementing the Coastal Hazards Organizational Resilience Team (COHORT)” to coordinate and strengthen coastal resilience. The project scope of work, preliminary results, and presentation are available [HERE](#).

- The Ruckelshaus Team began their presentation with a visioning exercise for WCMAC members
- The Ruckelshaus Team reviewed project goals and assessment methods and presented preliminary findings. The report includes options for the goals, functions, and structure. The COHORT team will incorporate feedback into final deliverables for the work group.

#### *Discussion and questions*

- Several members noted that biggest resilience issue is economic decline, which appears to be missing. Economic piece should be a larger focus and questioned why Dept. of Commerce was not identified as a COHORT agency.
- WCMAC and MRCs have not had adequate capacity to keep up with momentum of groups. Hopefully this new group would provide staff capacity rather than additional administrative overview.
- How do Olympic Natural Resources Center, Dept. of Commerce, and existing hazard mitigation plans fit in?
- Outcomes are not clear in the proposal. How would this organizational structure directly impact the likelihood of achieving those outcomes that wouldn't otherwise happen?
- Proposal should clarify recovery continuum focus of group (presumably planning and recovery).
- Members want more specific examples of success stories.
- It would be helpful to have high-level budget estimates (FTE costs from agencies) for administration costs.
- How will this group be administered and facilitated and what skills and qualifications would be prioritized in hiring?
- Other missing elements are the need to cultivate coastal leaders, as well as role of private sector. Advocacy and storytelling piece should be elevated.
- The final proposal will be a starting point for the group and can serve as a basis for a funding proposal. The nature of priorities and group focus will be up to WCMAC.

#### **Work Group Updates**

##### Economic Development Work Group

- The primary goal is to host a one-day coastal economic development workshop in May in Aberdeen or Ocean Shores. It will likely include a morning educational component focused on state of knowledge, data sharing, challenges and strengths, emerging issues and opportunities, followed by a visioning discussion for 2023, 2035, 2050 and three tangible next steps to get there. The next Work Group meeting will be in July; contact Rod if you want to join.

##### Coastal Resilience Work Group

- Work Group has been focused on the COHORT project and will be discussing how to use the Ruckelshaus report. Staff will be working with the WCMAC steering committee to determine next steps for the report and resilience priorities.

##### MSP Implementation Work Group

- Dept. of Ecology is working to incorporate MSP into Coastal Zone Management Plan, including submitting enforceable policies to NOAA for adoption (see section on enforceable policies in MSP). Ecology staff are reviewing county Shoreline Master Programs to ensure they are consistent and enforceable policies are adopted.
- NOAA awarded funds for implementation of MSP; Teressa Pucylowski is a new staff member at Dept. of Ecology focused on this and doing outreach and education, reviewing data gaps, and refining ecosystem indicators. They are

working with NOAA on refining ecosystem indicators and data gaps in the MSP to inform shared priorities and management decisions.

#### Work Group Meeting Format

- For work group meetings, members decided to keep **one standing Technical Committee meeting per month** with time for different topics on the agenda, rotating order to ensure each topic group gets adequate attention. The Economic Development Work Group will continue to meet separately to plan the May workshop and provide updates during the standing work group meeting. Emily Wright will send a doodle poll to determine time for standing work group meeting.
- Ecology will explore options for WebEx or Zoom rather than just conference call.

#### Public Comment #1 & #2

- No public comments were offered.

#### Ecological Indicator Selection for Olympic Coast National Marine Sanctuary's 2020 Condition Report

Jenny Waddell from NOAA gave a presentation on the Olympic Coast National Marine Sanctuary and the 2020 Conditions Report which evaluates management and protection of ecological and cultural resources at 13 marine sanctuaries and two marine monuments. In the report, there are 17 static components and a new section on ecosystem services which includes cultural resources, coastal protection, provisional services, etc. They will be holding a workshop with experts and Tribes in the winter to discuss indicators for water quality, habitat, and living marine resources. Presentation is available [HERE](#).

#### Discussion and questions

- How will report results help better manage the sanctuary or bring in additional resources to the state? The findings will help identify data gaps for relevant agencies and opportunities for collaboration, as well as allow for mid-course corrections for management plans formally and in day-to-day operations of agencies.
- There is a WA Sea Grant fellow working with partners to move forward with ocean acidification sentinel site work.
- Rich suggested that WCMAC focus in on the development of ecosystem indicators for estuaries to support/build on the OCNMS process since WCMAC has estuary expertise. Some preparatory work has been done but the list of 300 indicators needs to be winnowed down. Other members disagreed about estuaries being a part of the sanctuary, but that they do impact the sanctuary.
- The Sanctuary manages seafloor disturbance, wildlife disturbance, and discharges, but not fisheries. National Marine Sanctuary Act of 1972 prohibits oil and gas exploration and development in sanctuaries. There is an IMO designation preventing transit of ships of more than 400 gross tons, although tugs and barges are exempt, which is a loophole for oil shipment. A permit would be required from the sanctuary for any interaction with the sea floor (for mining, etc.).
- With the presence of the two largest estuaries on the west coast, the fact that NOAA doesn't have relevant programs to support ecological indicator development for estuaries is an important gap.

#### Update on Economic Dashboard for Coastal Washington

Kevin Decker of WA Sea Grant gave a presentation and demonstration on the [economic dashboard](#) for coastal Washington he developed. Kevin will continue to build out the site with additional topics (fisheries, recreation, industry-specific, etc.) and update it at least annually, and will also conduct outreach to economic development organizations to build a distribution list. Contact [Kevin](#) with suggestions about desired data, data sources, etc.

#### WCMAC Workplan & Future Agenda Items

##### September

- Salmon recovery, management, hatchery panel and discussion with WDFW and RCO (additional meeting in Sept.)
- Ecosystem indicators (and whether or not to address indicators in estuaries)

- Data gaps in Marine Spatial Plan (work group will discuss first before bringing to WCMAC for prioritization)
- Green crab presentation from Stephanie Martin (Makah Tribe) with WDFW and WA Sea Grant
- Follow up on the COHORT project developed by the Ruckelshaus Center

#### Future

- Harmful algal blooms presentation from Anthony Odell
- Data gaps for ecosystem indicators
- Recreation and tourism
- Benthic impacts due to burrowing shrimp expansion in Willapa Bay, Grays Harbor presentation from Kathleen Sayce
- Ocean acidification sentinel site
- Dept. of Ecology Spills Program briefing
- Sea floor mapping updates from Olympic Coast National Marine Sanctuary
- Ocean conditions presentation from Brian Beckman of NOAA
- Financial reports/WCMAC budget updates

Susan will schedule WCMAC meetings for 2020 following usual schedule of 2<sup>nd</sup> or 3<sup>rd</sup> Wednesday in March, June, September, December. Contact Susan ASAP with any major conflicts.

#### Other Issues or Announcements

- We are having an unusual mortality event for gray whales on the coast, although we have experienced such events in the past. Hypotheses include low prey availability last year negatively impacting them now (don't feed during migration), changes in their primary feeding habitat, and traveling further into Bering Sea to find food. Populations have also rebounded since they were delisted in 1994, so may be experiencing more intraspecies competition.
- Members expressed their appreciation for the work and partnership of Michal Rechner and Sally Toteff throughout their involvement on WCMAC.

#### Summary of Decisions

- ! The March Meeting Summary was adopted with noted changes.

<p><b>Upcoming Meetings</b></p> <ul style="list-style-type: none"> <li>• Wednesday, September 18, 2019</li> <li>• Wednesday, December 11, 2019</li> </ul> <p><i>Meetings will be held in Aberdeen unless otherwise noted</i></p>
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#### Follow-up Items

- Russell will send the special projects hiring announcement for coastal resilience projects to WCMAC members.
- Sally will send a map of WRIAs and instream flow rules in place.
- Susan will send out an updated version of the contact sheet.
- Emily Wright will send a doodle poll to determine time for standing work group meeting.

# Washington Coastal Marine Advisory Council Meeting Summary


June 12, 2019 | 9:30 – 3:30  
Port of Grays Harbor  
111 S. Wooding St.,  
Aberdeen, WA


## Coastal Updates


- Pacific and North Pacific MRCs are hosting events in the fall on topics like razor clams and salmon hatcheries.
- North Pacific MRC hosted annual **RainFest**, including [Ocean and Rivers Film Festival](#).
- Governor has declared a **drought emergency** in Chehalis Basin and 12 other watersheds.
- Dept. of Ecology and City of Hoquiam are reviewing **Contanda's revised proposal**.
- DNR did not receive sufficient funding to remove **sunken Hero vessel**. DNR is testing three sites in Willapa Bay for **sand shrimp response** to sediment disturbance.
- MRAC received funding for research projects on **OA impacts** to salmon, HABs, forage fish.
- Coast Salmon Partnership is starting **habitat construction** season and starting **outreach** to communities about cold water refugia work.
- WA Sea Grant/Dept of Ecology will be hiring a staff person focused on **coastal resilience projects**.
- Dept. of Ecology has released **oil spill response capacity analysis**. Public comment open until June 24.

## Work Group Updates

UPDATE: **One standing monthly meeting** for work groups with rotating order. Will try WebEx or Zoom. Look for doodle to find meeting time.

 **Economic Development** - Planning May economic development workshop. Next meeting in July. Contact Rod to join.

 **Coastal Resilience** - Determining COHORT project next steps. Working on erosion policy science workshop and community projects with MRCs.

 **MSP Implementation** - Submitted enforceable policies to NOAA for adoption. New staff person at Ecology: Teresa Pucylowski.



### Summary of Decisions

- March meeting summary was adopted



### Public Comment

- None

# Presentations

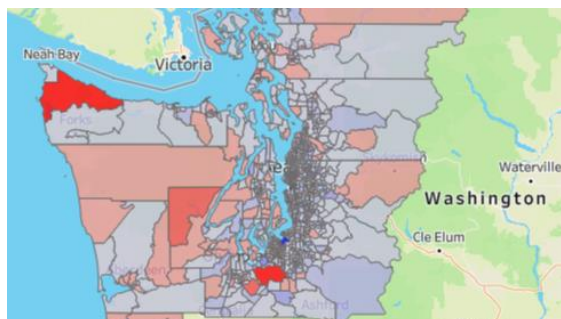


## COHORT Project, Ruckelshaus Center

The Ruckelshaus team presented their draft proposal for an agency group to coordinate and strengthen coastal resilience. WCMAC members provided feedback that:

- The economic development and resilience piece is missing and should be strengthened.
- There should be more emphasis on communications and storytelling along with the need to cultivate coastal leaders.
- WCMAC members want to ensure that this proposal provides capacity and isn't simply another organization focused on problem identification rather than problem solving.

## Economic Dashboard for Coastal Washington



Kevin Decker of WA Sea Grant has developed an [interactive dashboard](#) of economic indicators, including population, unemployment, income, housing, and competitiveness that allows for manipulation and comparison.

This will be a powerful tool for telling the story of economic trends and development on the coast. He will be adding more sectors; contact him if you have requests or data sources.



## Olympic Coast National Marine Sanctuary 2020 Conditions Report, NOAA

Every five years, NOAA evaluates management and protection of ecological resources at 13 marine sanctuaries and two marine monuments. This year's report includes a new section on ecosystem services like cultural resources, coastal protection, and provisional services. This project and WCMAC's ecological indicators project highlight the gap in ecological indicators for estuaries. This could be an area for future research and collaboration.

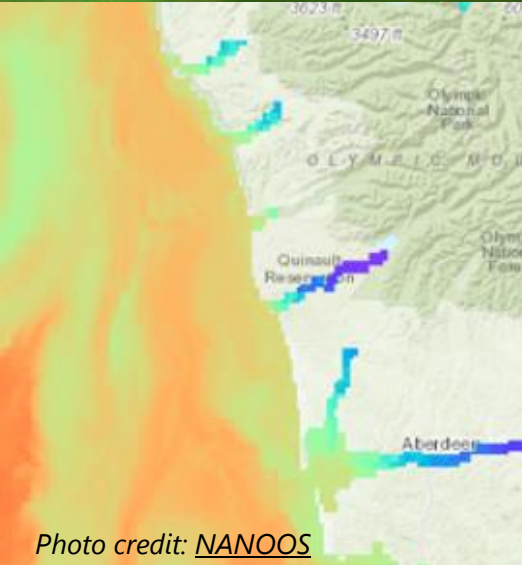


Meeting materials can be found at:

<https://www.ezview.wa.gov/?alias=1962&pageid=37058>



# WCMAC Work Plan



## September 2019 potential meeting topics:

- Salmon management questions (*additional meeting TBD*)
- Ecosystem indicators, possibly including estuaries.
- MSP data gaps
- Green crab
- Follow up on the COHORT project developed by the Ruckelshaus Center

## Future potential meeting topics

- Harmful Algal Blooms (HAB)
- Ecosystem indicators data gaps
- Benthic impacts of burrowing shrimp
- Dept. of Ecology Spills Program
- OA sentinel site
- Recreation and tourism
- Sea floor mapping
- Ocean conditions
- Financial reports

### Upcoming Meetings

- Wednesday, Sept. 18
- Salmon hatchery discussion TBD
- Wednesday, Dec. 11



# Discussion of Salmon on WA Coast at Oct. 2, 2019 WCMAC Meeting

*The WCMAC has expressed interest in various aspects of salmon conservation and management. Given the breadth of topics, we recommend organizing a panel of speakers to address the issues summarized below.*

## **1. Salmon management and policy on the WA coast**

**Ron Warren and Kyle Adicks** will describe the different considerations in salmon management (general salmon management and hatchery policies), and the complexity of the management regime. This may include such things as:

- Physical conditions
- ESA
- Status and trends
- Treaty rights and tribal co-management
- Orca recovery
- Economic value of salmon to coastal communities
- Complexity as compared to other states
- Considerations in developing hatchery policies
- Hatchery fish interaction with native fish
- Mitigation by hatcheries on the Columbia River
- Processes and organizations involved in salmon and hatchery management

The speaker will attempt to address topics and information related to these questions but will not answer each question one by one:

- ✓ What are the different hatchery policies on the west coast, including Tribes in different states, and what physical conditions (rivers, wild/non-wild fish) drive implementation of those policies? How does Washington compare? (Doug)
- ✓ What drives dumping of hatchery fish and what does it do to waterways? (Crystal)
- ✓ Hatchery fish have been derided but more recently are seen as important for orca recovery. How can those two things be reconciled? (Rod Fleck)
- ✓ What are the economic impacts of not having the same historic levels of production and catch of fish that have existed in the past? What is the cost of producing a fish vs the economic, social, and recreational benefits of having those fish, to humans as well as other species (orcas, etc.)? (Larry)
- ✓ Discuss the role of subsistence fishing (Tribal and non-Tribal fishing) and its role in coastal communities. (Rod)
- ✓ Quantify the number of Washington communities benefiting from commercial and recreational fishing over time. It seems to have diminished to just a few, since many are relying on other sectors out of necessity. (Crystal)

## **2. Status of Salmon on the WA Coast**

**Jeff Davis** will provide an overview of what is known about the ecosystem changes affecting salmon that coastal fisheries depend on, the potential causes and trends going forward.

The speaker will attempt to address topics and information related to these questions but will not answer each question one by one:

- ✓ What's the worst-case scenario for salmonids? (Rod)
- ✓ What is the available spawning habitat over the last four decades? What did it look like after dams were established, and what does it look like today? (Jay)
- ✓ With significant changes in the aquatic environment (warming temps in oceans and rivers, pollution, etc.), what is the return on investment for habitat restoration? (Jay)
- ✓ How have coastal ocean conditions been affecting returns in recent years? (Rich)
- ✓ Are there specific watersheds that are higher priority when considering current return on investment? (Jay)

## **3. Hatchery Management and Columbia River Mitigation**

**Eric Kinne** will provide a short overview of the state and federal roles in management of salmon and hatcheries, with an emphasis on the Columbia River system.

The speaker will attempt to address topics and information related to these questions but will not answer each question one by one:

- ✓ What are federal mitigation requirements for dams on the Columbia River? Is Washington meeting those requirements and if not, why not? (Mike Passmore)
- ✓ List the Mitchell Act hatcheries. Has the original intent of the hatcheries (to mitigate losses to commercial fishing and coastal communities) been affected by state laws and decisions? (Brian)
- ✓ What is the biggest bang for the buck strategy to get fish in the ocean from WDFW's point of view? (Brian)
- ✓ What is the cost of producing a hatchery salmon (both the fish going out as well as those coming back)? (Larry)
- ✓ What fish stocks do we have to enhance to specifically address economic needs of coastal communities? (Dale)
- ✓ Is there any information linking fish consumed by orcas to specific hatcheries? Which fish are orcas able to access and eat, and can we use that to determine which hatcheries might be of higher value? (Brian)
- ✓ What are the data gaps when looking at the history of recreational and commercial catch rates and hatchery production? (Brian)
- ✓ How successful has the Hatchery Scientific Review Group (HSRG) policy been in maintaining adequate viable fish populations? (Larry)
- ✓ What accounts for the observed lower success rates for smolts released from hatcheries? (Dave Fluharty, Larry)

#### 4. Salmon Recovery

**Erik Neatherlin** will explain how salmon recovery works in Washington including an overview of the salmon recovery organizations and role of partnerships, the overall status, some the key challenges and areas of progress, and some of the differences, challenges, and opportunities on the Washington Coast.

The speaker will attempt to address topics and information related to these questions but will not answer each question one by one:

- ✓ What policies are necessary to deliver benefits of enhancing stocks to rural and coastal communities? (Dale)
- ✓ What are the most effective strategies to reduce salmon predation (avian, pinniped, etc.) so that habitat restoration and salmon recovery efforts aren't wasted? (Dale)
- ✓ From what areas of the state are we seeing reduced return rates (wild and hatchery), and from what areas have we not seen a change in return rates over time? (Mara Zimmerman)

The following questions likely cannot be addressed by this speaker/these speakers:

- What can be done to get some of the salmon mitigation funding from Bonneville Power Administration back to benefit coastal communities while still acknowledging ESA listing? (Dale)  
***Need to discuss with BPA***
- How would WDFW explain permitting of a dam on the upper Chehalis, and what does it expect in terms of loss/gain of fish all the way down to the estuary since it will interrupt the natural flow of the river over time? (RD Grunbaum)  
*The Department of Ecology's Office of Chehalis Basin is the state's lead agency on this issue.*

# WCMAC Workplan

9/25/19

	Topic	Purpose	Source*	WCMAC Focus	Timeframe	Tasks	Information Needs	Working Group (Y/N)	Notes/Status Updates
A.	<b>Coastal Resilience</b>	Prioritize needs and actions to carry out the recommendations in the Ruckelshaus "Washington State Coast Resilience Assessment Final Report (2017)"	C	Information Sharing; Informal Advice; Formal Recommendations	Ongoing	1. Participate in and help develop options for the Ruckelshaus Center "Coastal Hazards Organizational Resilience Team (COHORT)" 2. Guide Ecology and Washington Sea Grant in completing the "Washington Coast Resilience Action Demonstration (RAD) Project" 3. Guide and participate in a science-policy workshop on coastal erosion 4. Help shape recommendations to the Governor, the Legislature, and state and local agencies to further support long-term pre-disaster risk reduction for Washington's Pacific coast-wide resilience initiative.		Yes	* Coastal Resilience Work Group is formed and is holding meetings * WCMAC funding contracted with the Ruckelshaus Center to develop options for the "Coastal Hazards Organizational Resilience Team (COHORT)" by June 30, 2019 * 18 month NOAA grant was awarded to Ecology's Coastal Program to partner with WCMAC on the "Washington Coast Resilience Action Demonstration (RAD) Project" * Erosion science-policy workshop has been postponed until Fall 2019 because of the Ruckelshaus COHORT project.
B.	<b>Ecosystem Indicators</b>	To provide feedback to the state on refining the list of ecosystem indicators.	C	Informal Advice	6/19-7/19	1. Compile existing lists of indicators, summary of methods, and proposed process for refining indicators ( <i>WCMAC staff</i> ) 2. WCMAC briefing and discussion ( <i>WCMAC Meeting</i> ) 3. Staff and other experts participate in OCNMS Ecological Indicator selection process	1. List of current potential indicators 2. Summary of methods used to identify current list 3. Informational briefing on developing scientifically robust indicators 4. Presentation from OCNMS on Conditions Report and Ecological Indicators	No, but included in work of Science & Research Agenda Work Group	*Need to consult with NOAA (NWFS)
C.	<b>Economic Resiliency Workshop</b>	To convene a 1-day workshop on economic resiliency in coastal communities	W	Information Sharing	3/19-6/20	1. Develop scope of work/approach for a 1-day workshop in May of 2010 to address economic resiliency in coastal communities	TBD	Yes	*Rod has agreed to chair this effort.
D.	<b>Science and Research Agenda</b>	To provide feedback to the state on the development of a science and research agenda, including data gaps and WCMAC's priorities.	C	Informal Advice	6/19-7/19	1. Compile Data Gaps ( <i>WCMAC Staff</i> ) 2. WCMAC Discussion on Initial List of Gaps and Priorities ( <i>WCMAC Meeting</i> ) 3. Coordinate with ecosystem indicators work	1. List of data gaps (initial list from MSP) 2. Summary of existing, current science needs documents for WA Coast (e.g. OCNMS, PFMC)	Yes	
E.	<b>Monitor Implementation of MSP</b>	To keep WCMAC informed of MSP implementation efforts	C	Information Sharing	Ongoing	1. Summarize status of MSP implementation tasks ( <i>WCMAC staff</i> )	1. Informational Briefing on Status of MSP Implementation	No	*Include briefing on how the plan gets used, particularly regarding new applications *Review plans that are inconsistent with MSP
F.	<b>Annual Work Plan</b>	To develop an annual workplan to guide planning for WCMAC meetings and activities.	B	Operations/Admin	12/19	1. Compile topics and outcomes ( <i>Steering Committee</i> ) 2. Develop draft annual workplan ( <i>Steering Committee</i> ) 3. Discuss and adopt work plan ( <i>WCMAC Meeting</i> )	1. Input from WCMAC members and Gov's office on topics and priorities	No	* Initial draft work plan discussed at September meeting with final work plan addressed at Dec. meeting.
G.	<b>WCMAC Meeting Agendas and Operations</b>	To fulfill Steering Committee responsibilities as listed in the by-laws	B	Operations/Admin	Ongoing	1. Set WCMAC Agendas for each meeting 2. Conduct officer elections every 2 years		No	

Source: C= Governor's Charge; B=Bylaws; W=WCMAC Generated



# Salmon Fishery Management

Ron Warren, Director of Fish Policy  
Kyle Adicks, Intergovernmental Salmon Manager

10-2-2019



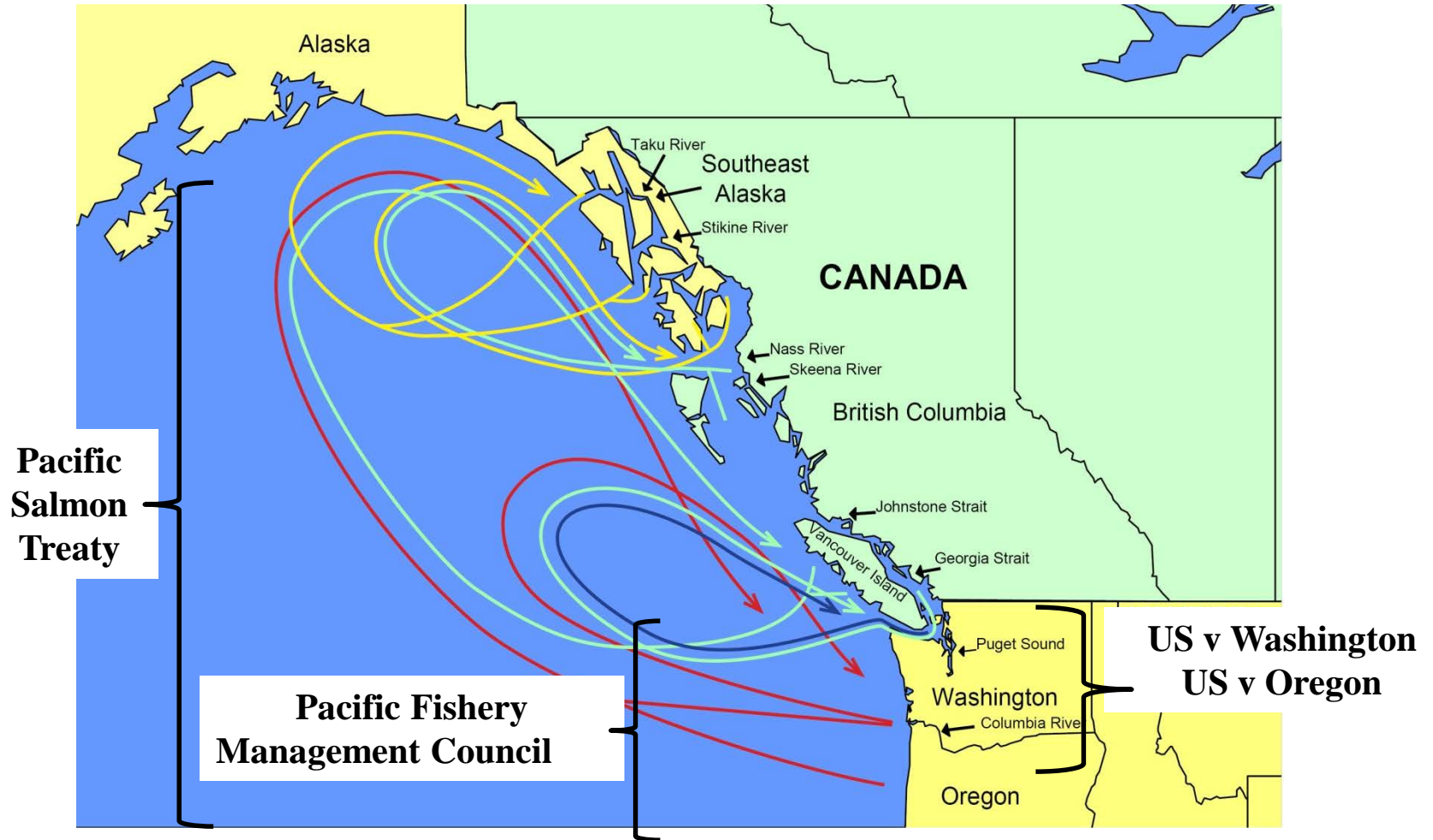
# Presentation Overview

- Management landscape
  - Pacific Salmon Treaty
  - Pacific Fisheries Management Council
  - North of Falcon comanager forum
- Challenges for salmon fishery management
  - Declining abundance / productivity
  - Hostile environmental conditions
  - ESA listings – Salmon and SRKW
  - Habitat loss





# Management landscape





# Prior to 1985 – No Pacific Salmon Treaty

Problem of interceptions

Last in line bears conservation burden

Unable to achieve management objectives even for “strong” stocks like Columbia Upriver Bright



# 1985

## Pacific Salmon Treaty

### Articles

Principles and high-level obligations

- Prevent overfishing
- Provide for optimum production
- Benefits equal to production

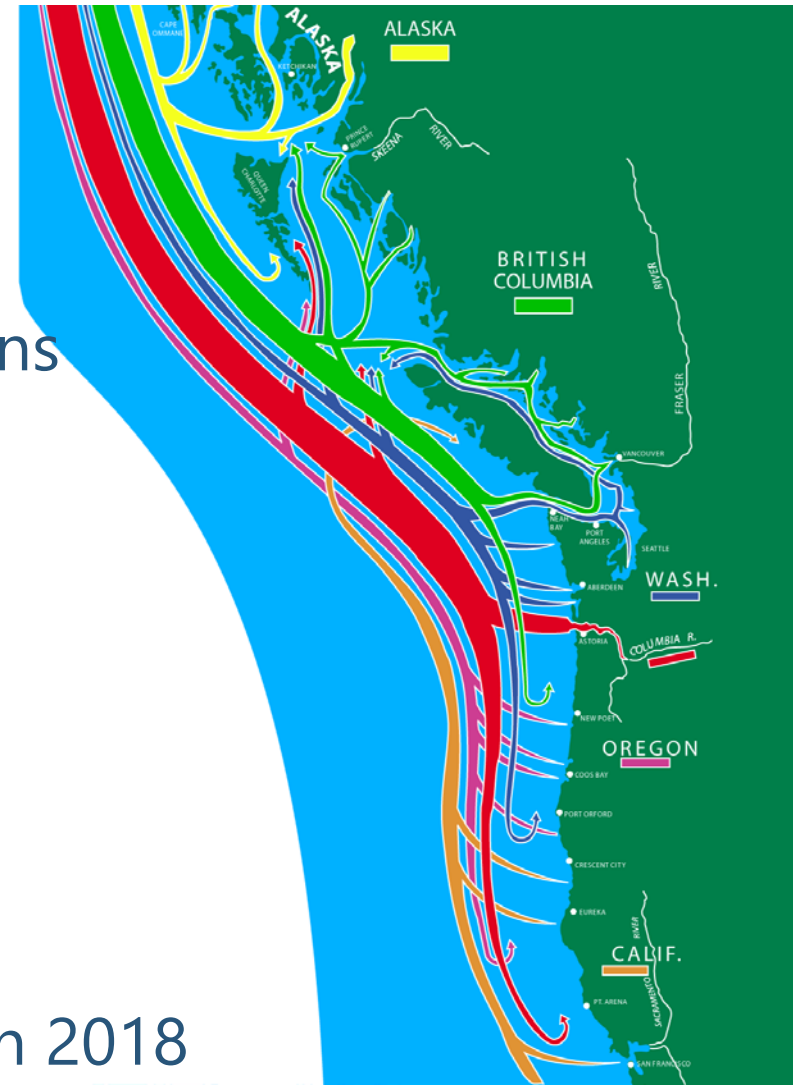
Ongoing unless terminated

### Chapters

Fishery-species management

Negotiated at ~ 10-year intervals

Previous Chinook chapter ended in 2018



# Pacific Salmon Treaty – 2019 Chinook Chapter

## Reductions in SEAK and Canadian Fisheries

SEAK: 7.5% reduction from 2009 level for most likely abundance levels

Canada:

- WCVI: 12.5% reduction from 2009 level for most likely abundance levels.
- ISBM: 12.5% reduction from 2009-2015 for U.S. stocks not meeting management objectives



# Pacific Salmon Treaty – 2019 Chinook Chapter

## SUS Fishery Obligations

Limits are expressed relative to 2009-15 average exploitation rates for stocks not meeting management objectives.

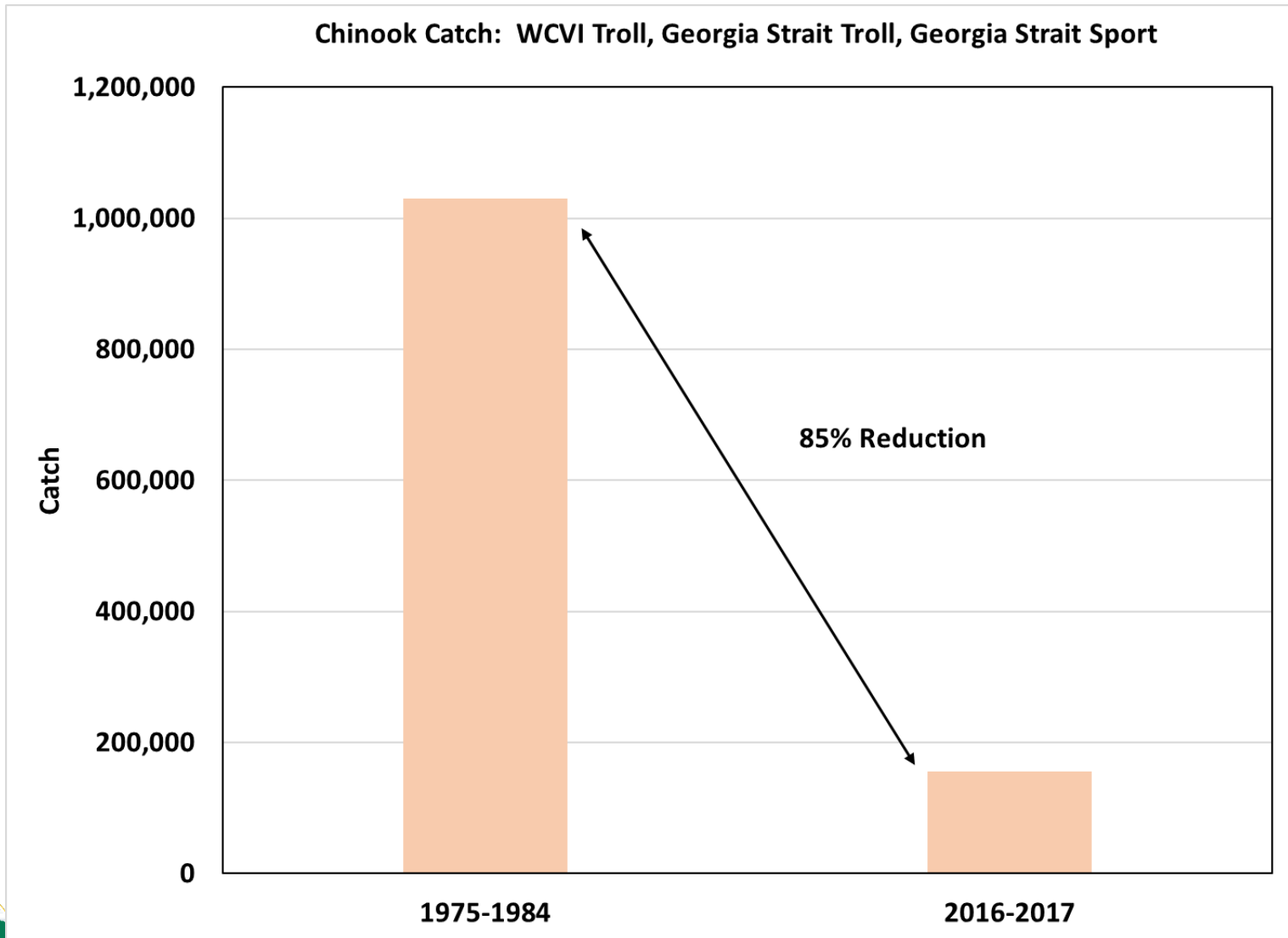
Puget Sound:

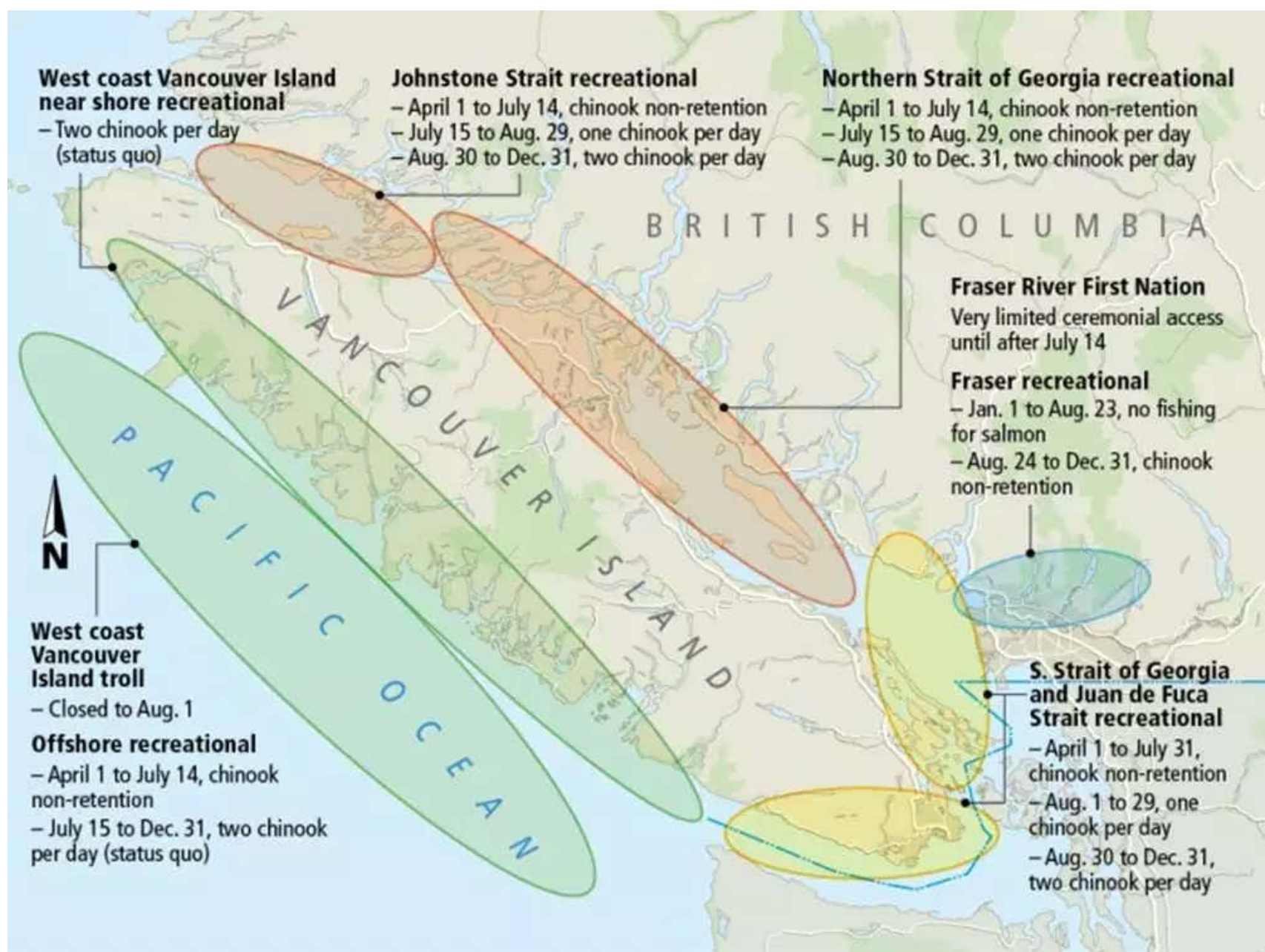
- 95% (Skagit)
- 100% (Nooksack, Stillaguamish, Snohomish)

Canadian Stocks: 95%



# Reduction in Canada's Catch under PST







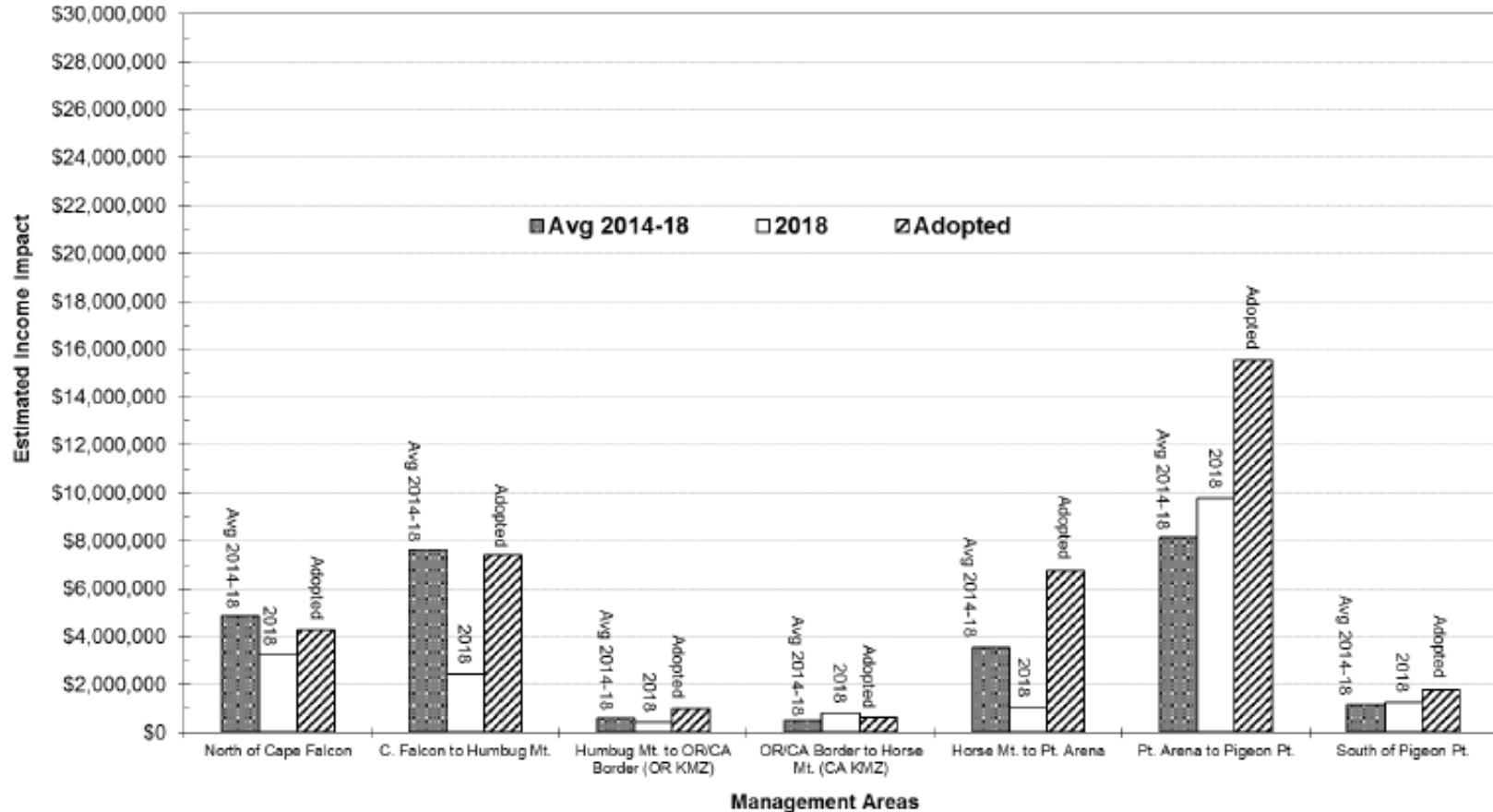


# Pacific Fishery Management Council

- Council sets sport and commercial salmon fisheries in the Pacific Ocean (in the EEZ) south of the Canadian border, in accordance with the Pacific Coast Salmon Plan and applicable ESA limitations
- Oregon, Washington, California and Idaho have government and constituent representatives on the Council
- Tribes, NOAA, USFWS, PSMFC, Alaska, US Coast Guard and the State Department are also represented
- Salmon Technical Team (scientists) and Salmon Advisory Subpanel (constituents) provide support and recommendations to the Council



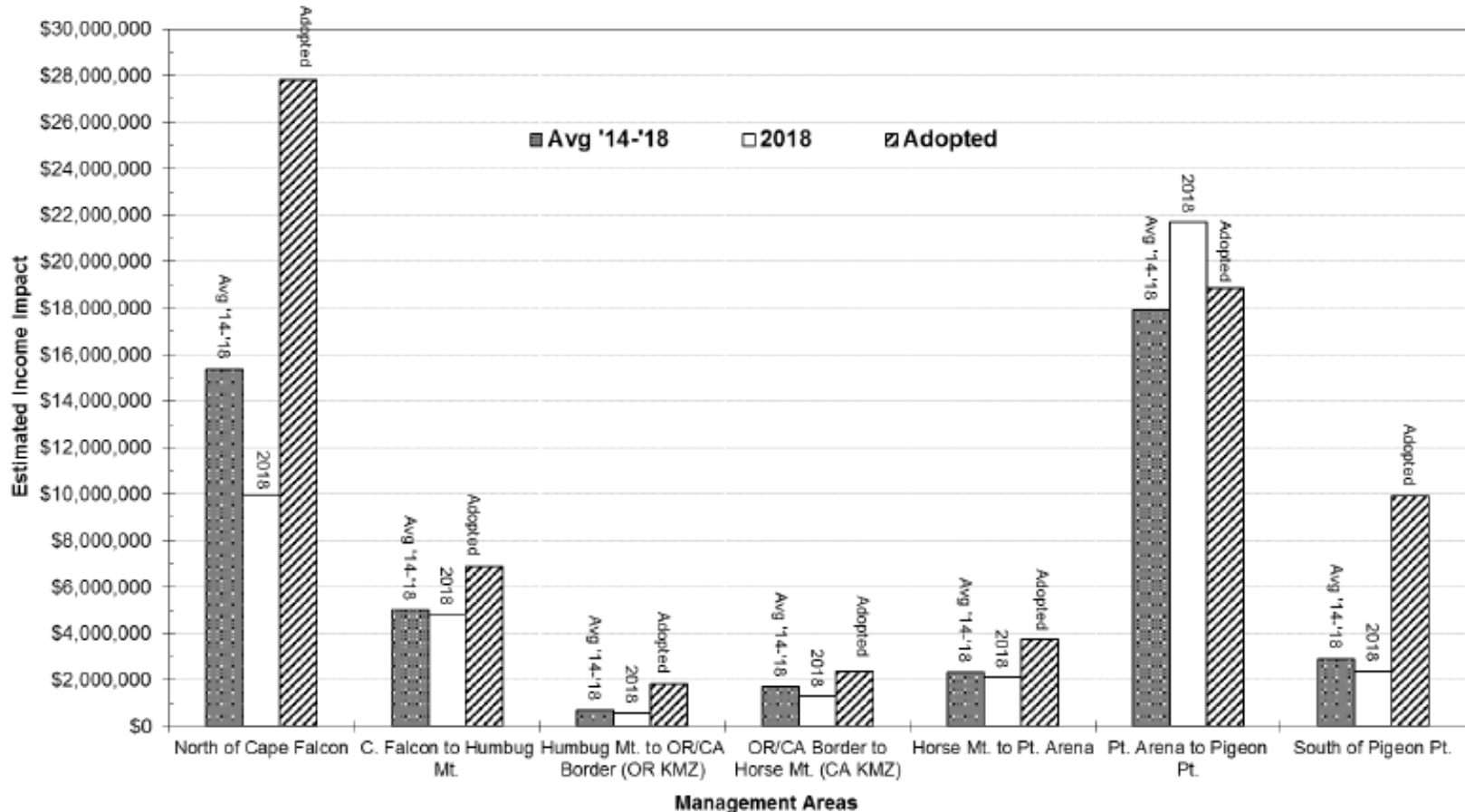
# Pacific Fishery Management Council



- Projected coastal community personal income impacts from commercial troll fishery (From PFMC 2019 Preseason Report III)



# Pacific Fishery Management Council



- Projected coastal community personal income impacts from recreational fishery (From PFMC 2019 Preseason Report III)



# North of Falcon process

## Annual salmon fishery planning in Washington

- Planning process that runs concurrently with the PFMC process
- Started as part of the move towards cooperative management with the tribes in the mid 1980's
- WDFW works with tribal comanagers and constituents to plan 'inside' fisheries that meet conservation objectives for each stock when linked with PST and PFMC fisheries
  - US vs Washington - Puget Sound, Strait of Juan de Fuca and Washington Coast
  - US vs Oregon – Columbia Basin



# State-Tribal co-management

- Each tribe has its own unique history, personalities, and interests in various fisheries (not just salmon).
- Salmon fishery comanagement is difficult, as we are all trying to conserve populations while numbers available for harvest are declining for many stocks
- Non-treaty constituents have a wide range of interests in fish and fisheries, and wide levels of understanding of legal issues behind treaties and comanagement. Every decision and agreement the department makes is scrutinized and criticized.



# State-Tribal co-management

- Sharing of catch today is not always 50/50
- Treaty and non-treaty fisheries have different objectives
- Negotiations over fisheries are often tense
- Compromises are reached to maximize fishery benefits toward meeting the objectives of each party



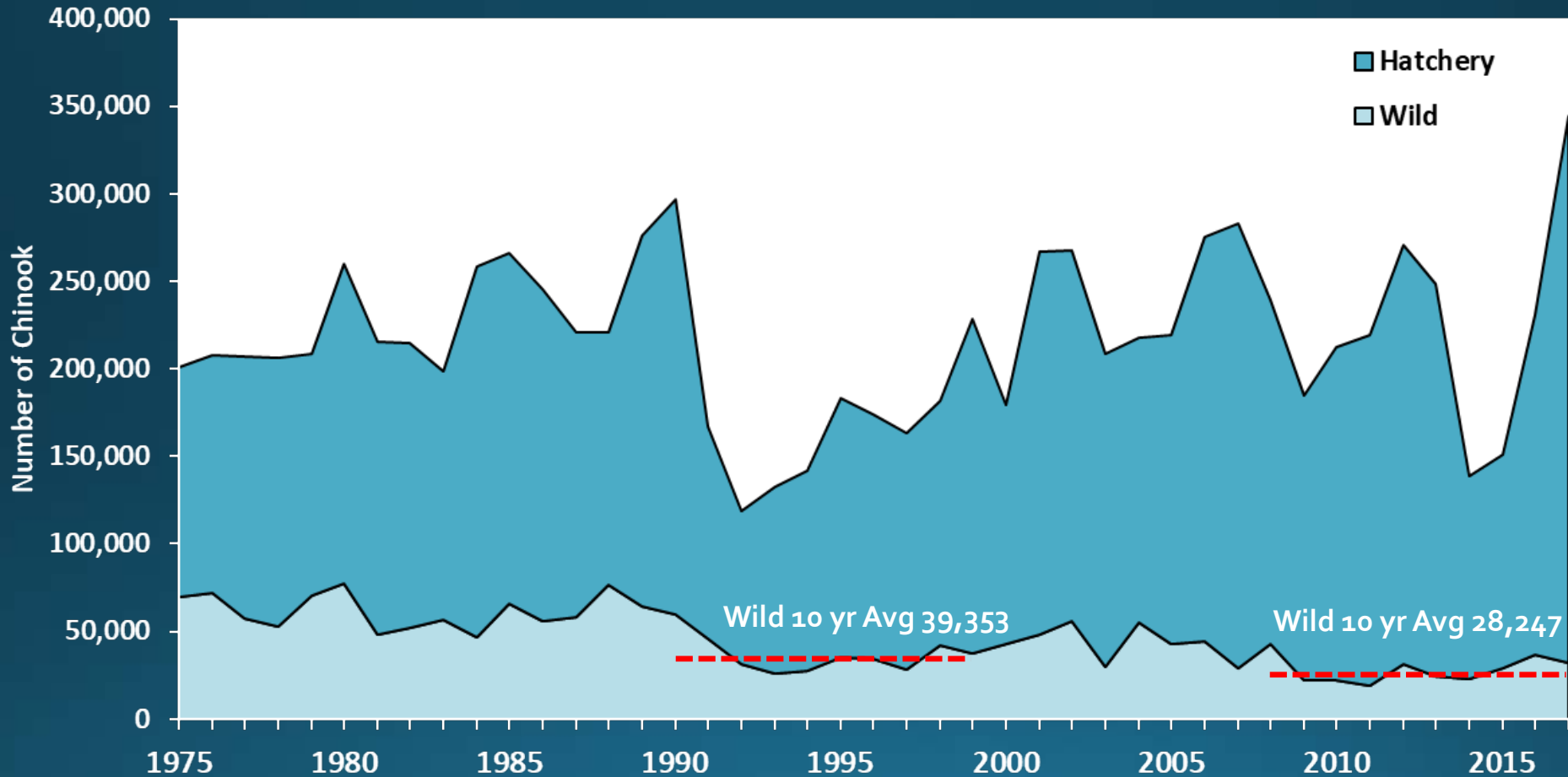
# Challenges for fishery management

- Declining abundance / productivity
- Climate change / hostile environmental conditions
- ESA listings – salmon and SRKW
- Habitat loss



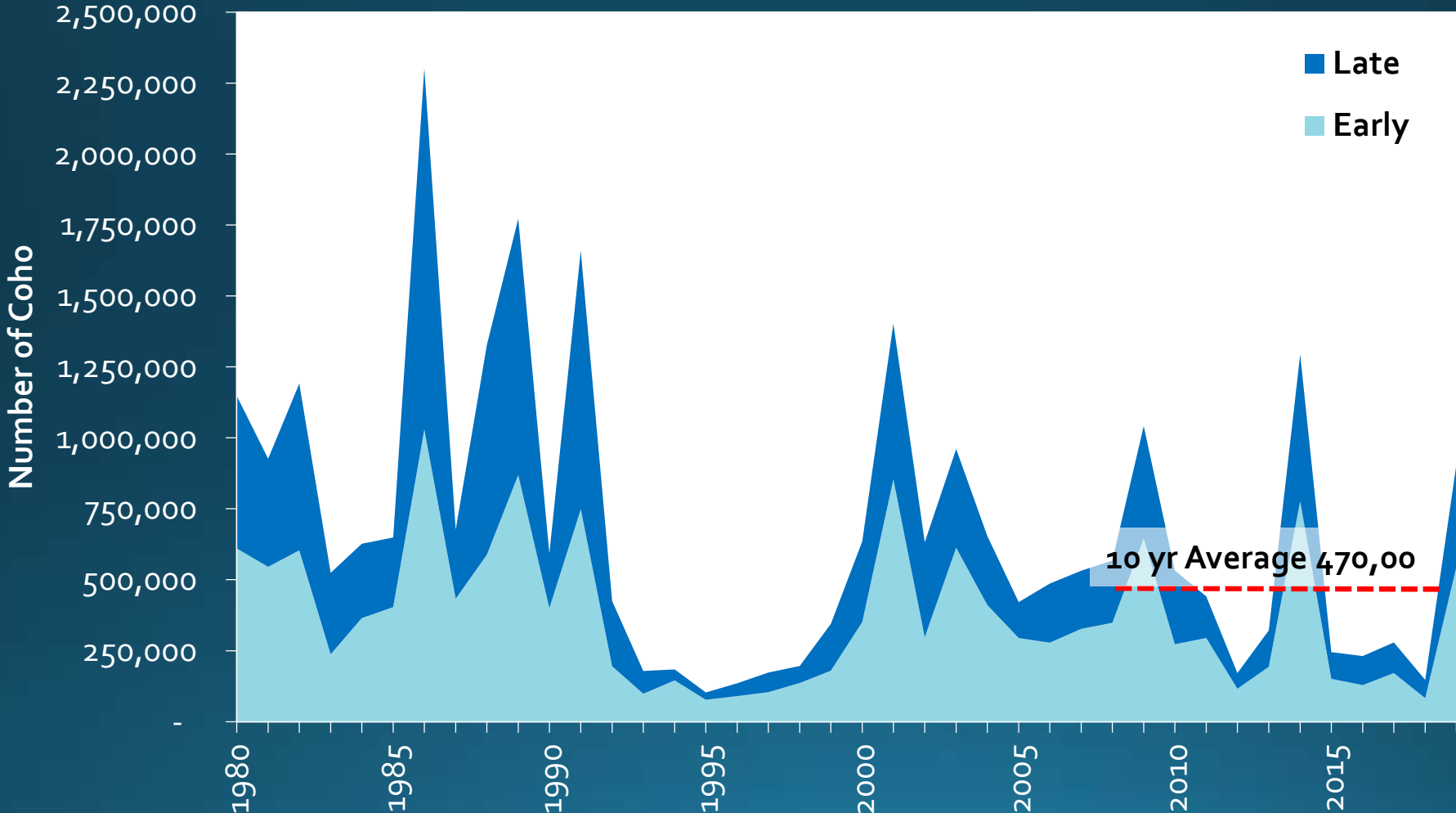


# Chinook Historical Runsize – Puget Sound



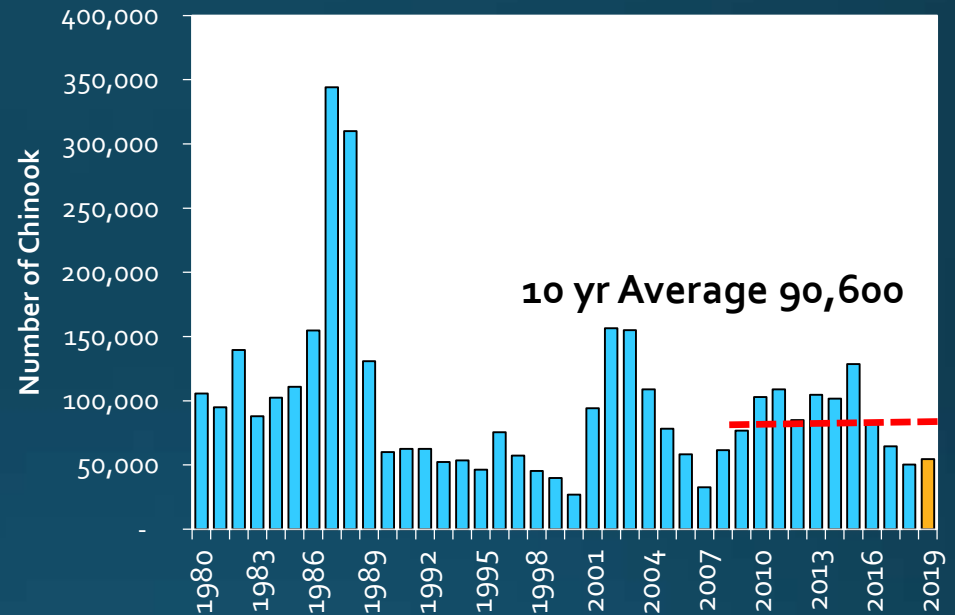
Wild Chinook ↓ ~28% since 10yr avg. prior to listing under ESA in 1999

# Coho Ocean Abundance – Columbia River

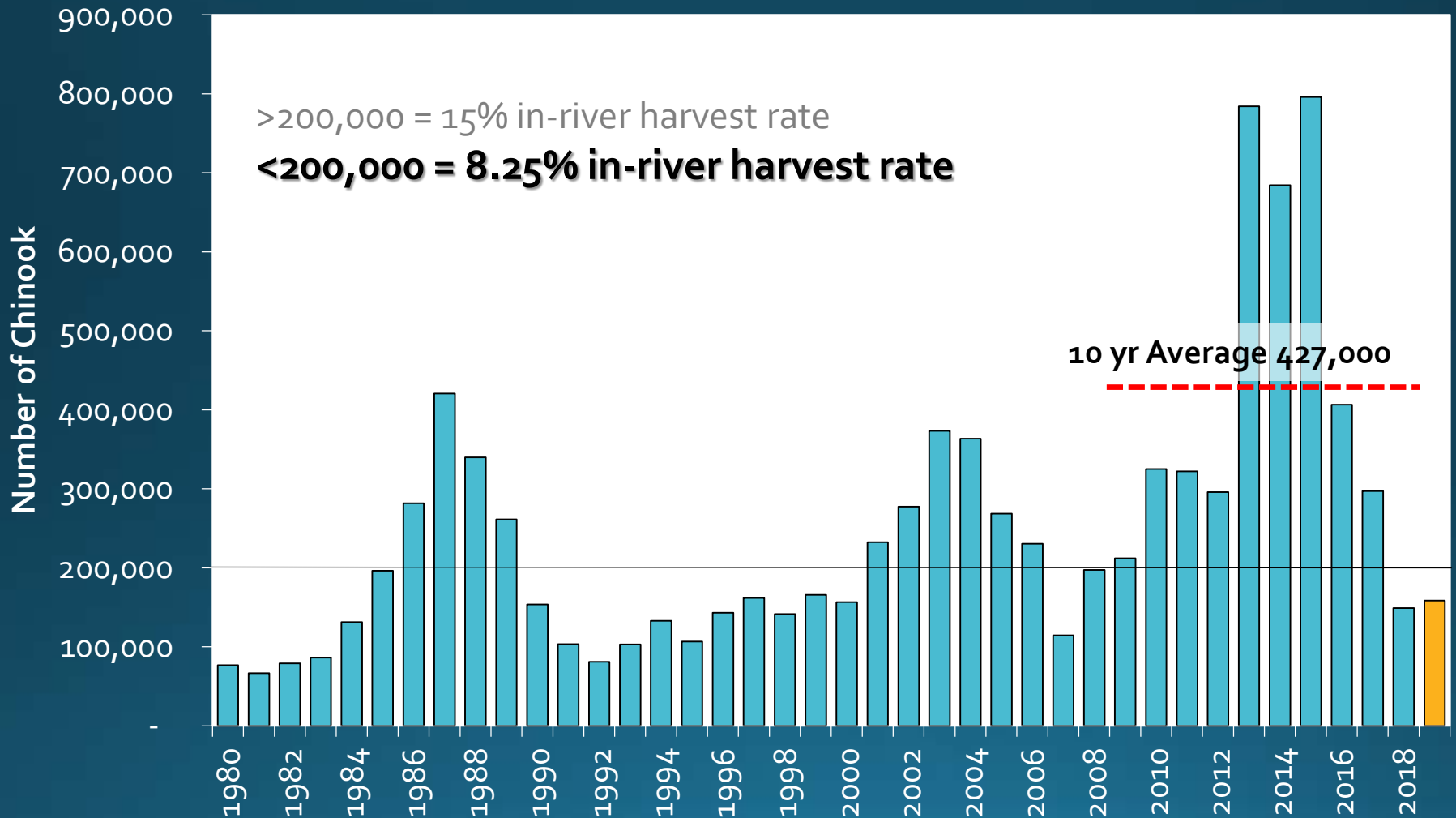


# Lower Columbia River Tule Exploitation Rate (ER) Matrix

<u>LRH Run Size</u>	<u>LCR Tule ER</u>
<30,000	30%
30,000 – 40,000	35%
40,000 – 85,000	38%
>85,000	41%

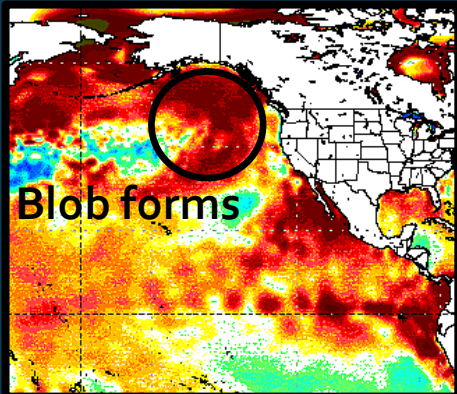


# Chinook Historical Runsize – URB

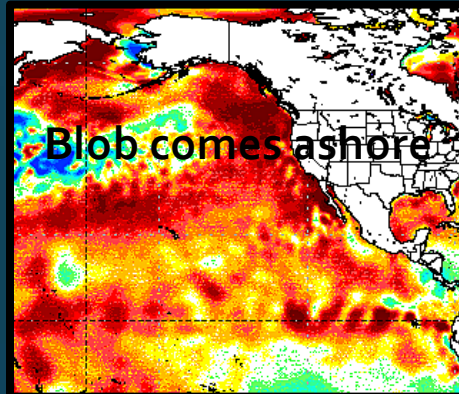


# Sea Surface Temperature Anomalies

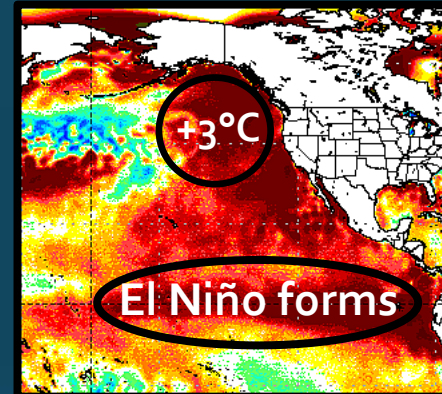
July 2014



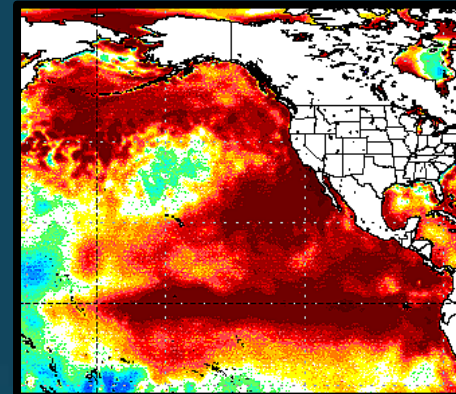
October 2014



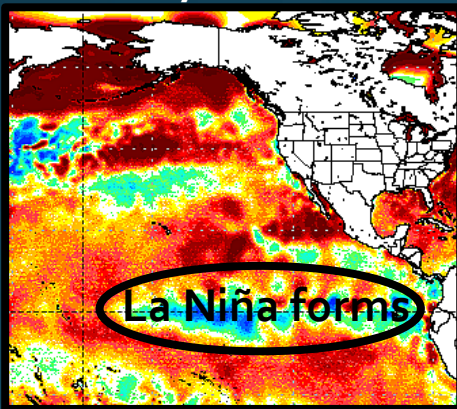
July 2015



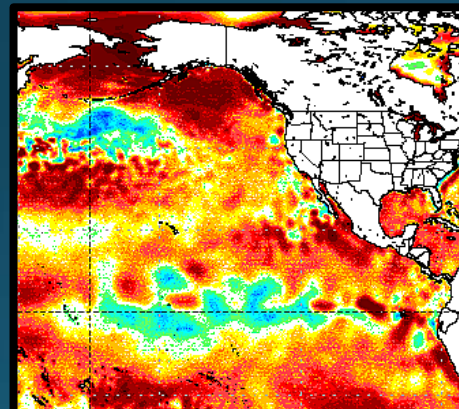
October 2015



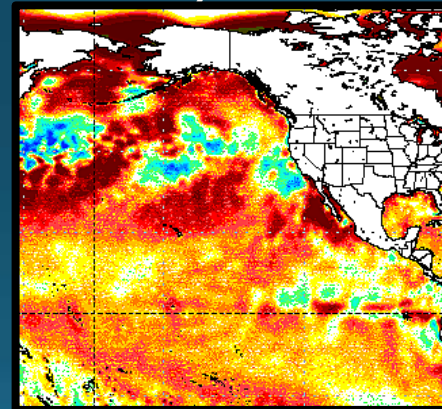
July 2016



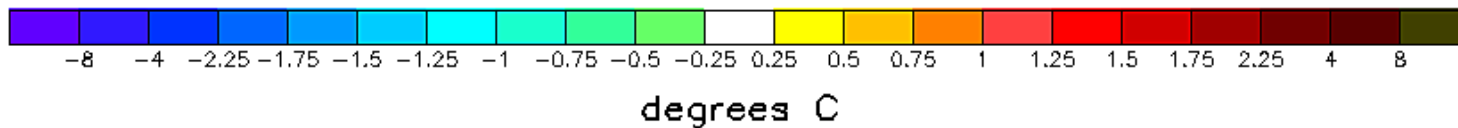
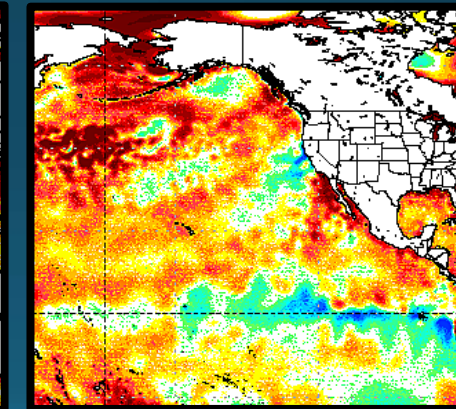
October 2016



July 2017



October 2017



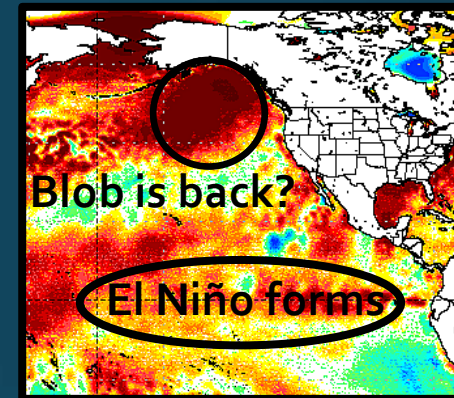
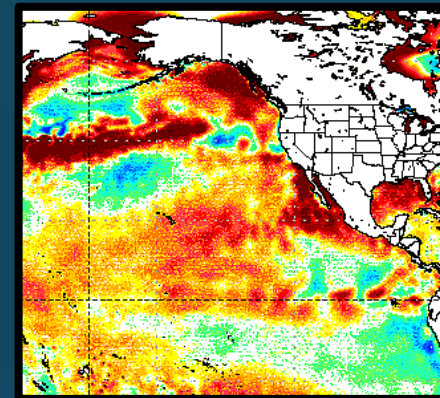
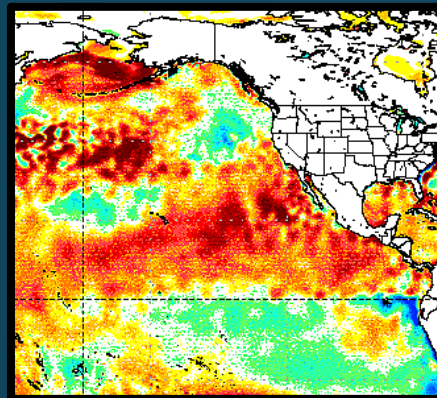
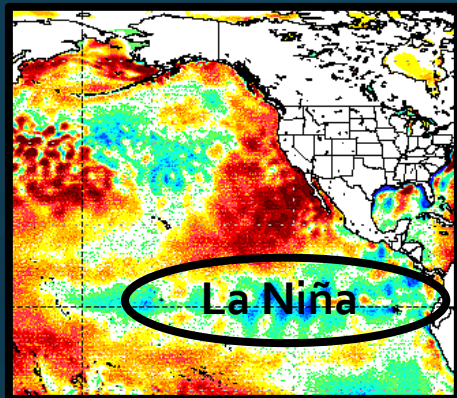
# Sea Surface Temperature Anomalies

Jan 2018

April 2018

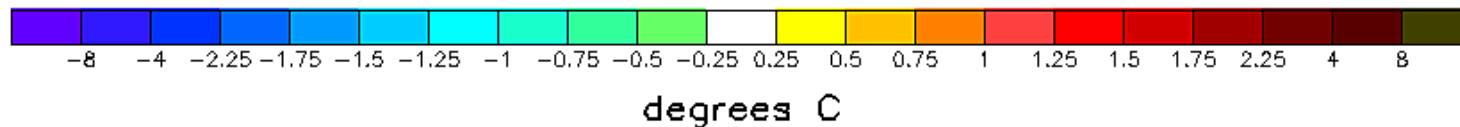
July 2018

October 2018



Weak La Niña dissipated in Spring 2018 and summer/fall were ENSO neutral

Mild September and October led to concerns of a return of "The Blob"

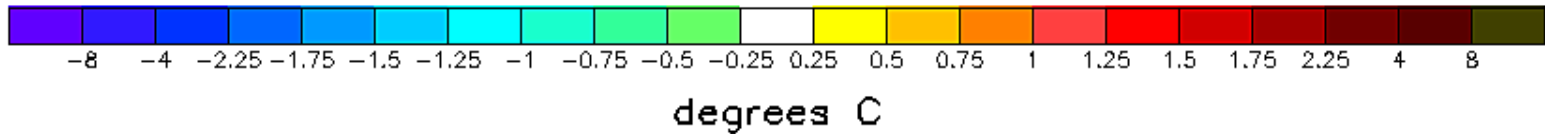
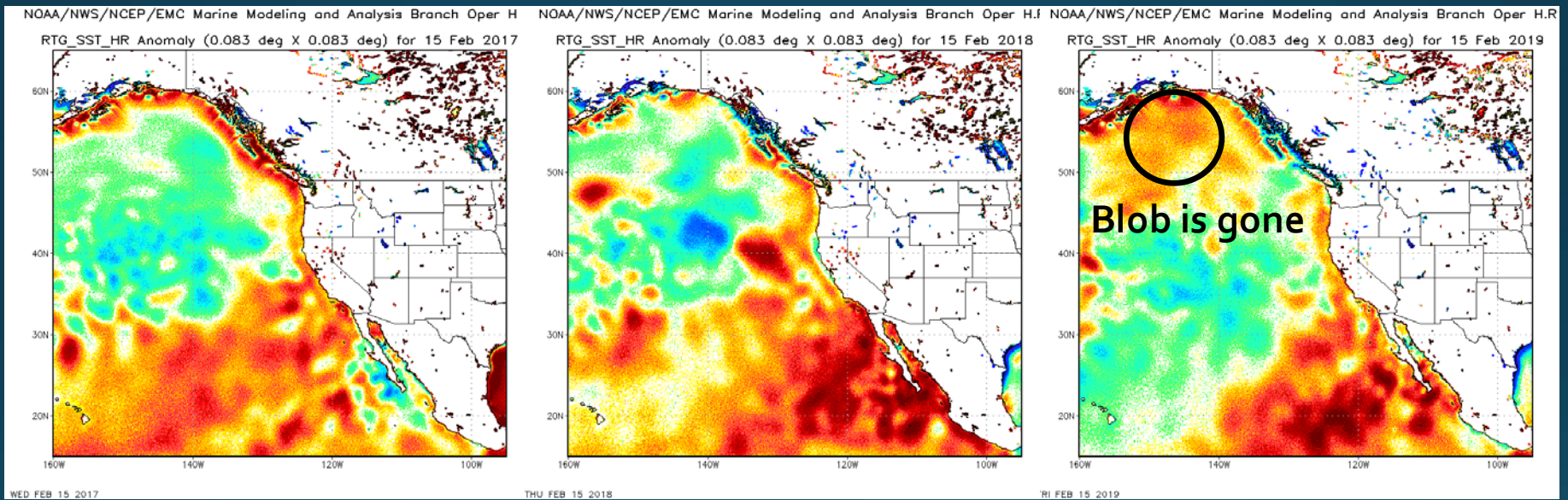


# North Pacific cools through 2017-2018

Feb 15, 2017

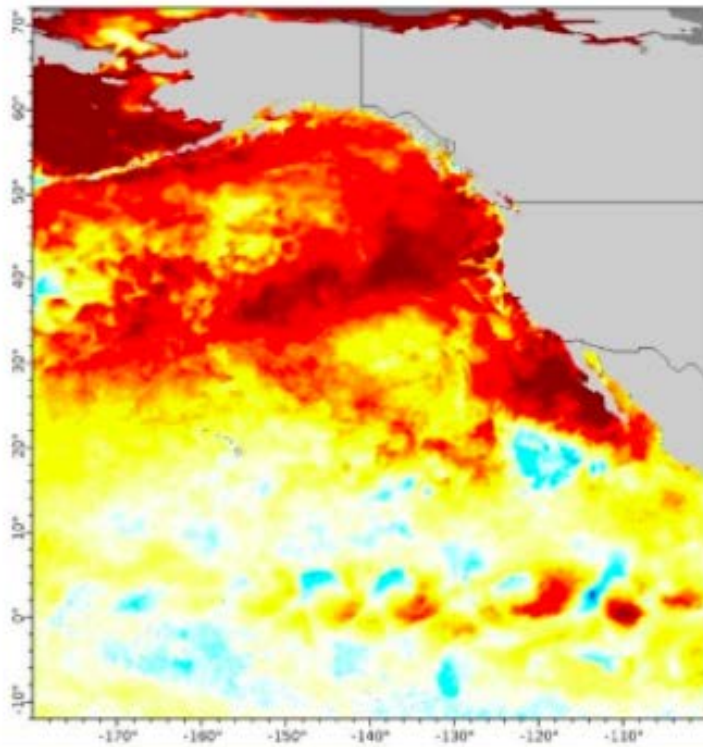
Feb 15, 2018

Feb 15, 2019

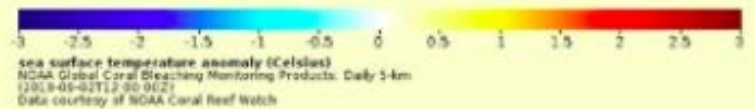
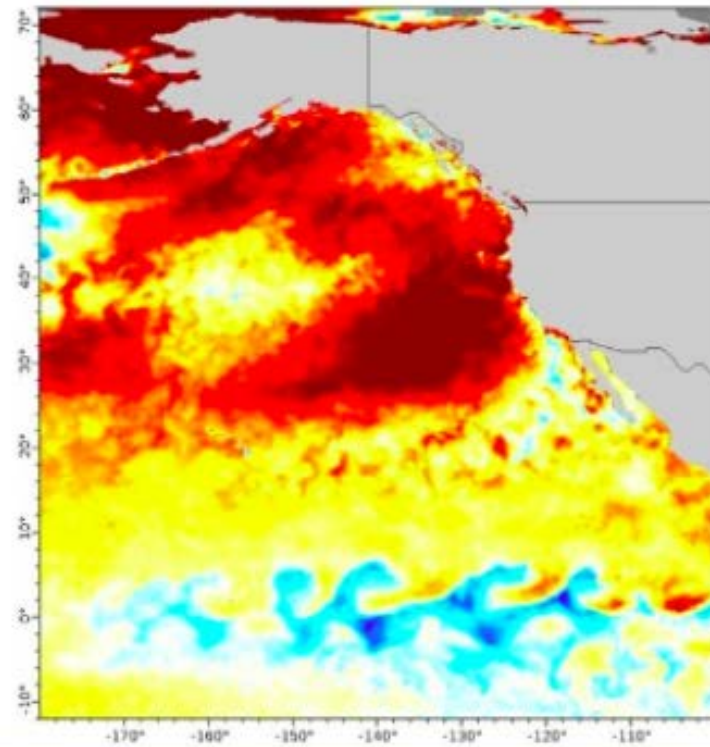


# Hostile environmental conditions

September 2014, as "the Blob" took shape

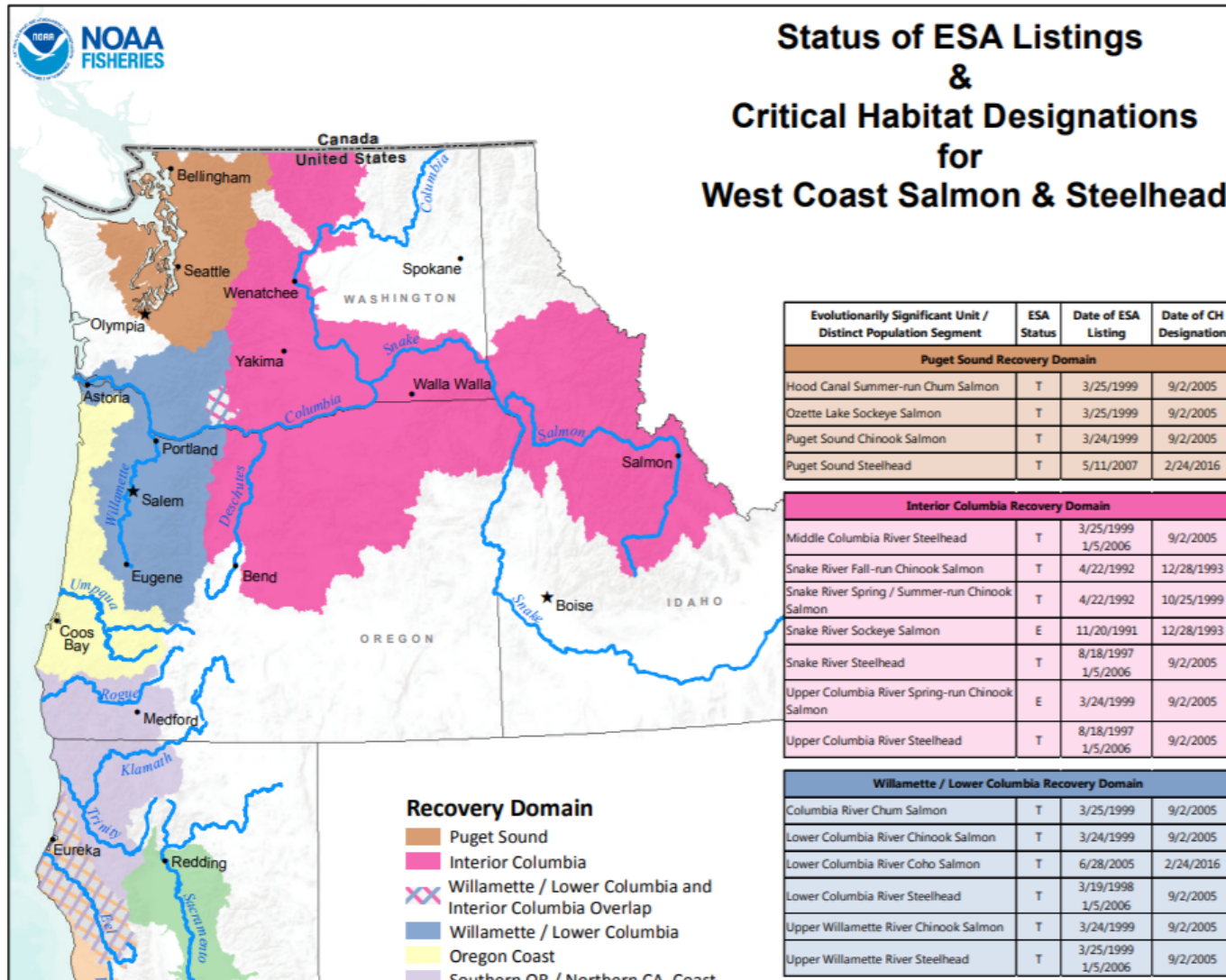


September 2019





# ESA listings



# Fisheries and SRKW



# Fisheries and SRKW

[Find a Species](#)[Fishing & Seafood](#)[Protecting Marine Life](#)[Environment](#)[Regions](#)[Resources](#)[Services](#)[About Us](#)

## Southern Resident Killer Whales and Fisheries Interaction Workgroup

NOAA Fisheries West Coast Region has reinitiated consultation under the Endangered Species Act to reconsider impacts of the ocean salmon fishery on the endangered Southern Resident killer whales. The existing NOAA Fisheries consultation on the fishery impacts to the Southern Residents was conducted in 2009, and while the current fisheries are in compliance with the Endangered Species Act, substantial new data has recently become available about the importance of Chinook salmon as prey for the Southern Residents. Therefore, the agency is working closely with the Pacific Fishery Management Council to reconsider the impacts and inform a new consultation.

[West Coast](#)

### Table of Contents

[The Workgroup](#)[Membership](#)[Purpose and Goals](#)[Opportunities for Public Involvement](#)[Meeting Schedule](#)[For more information](#)

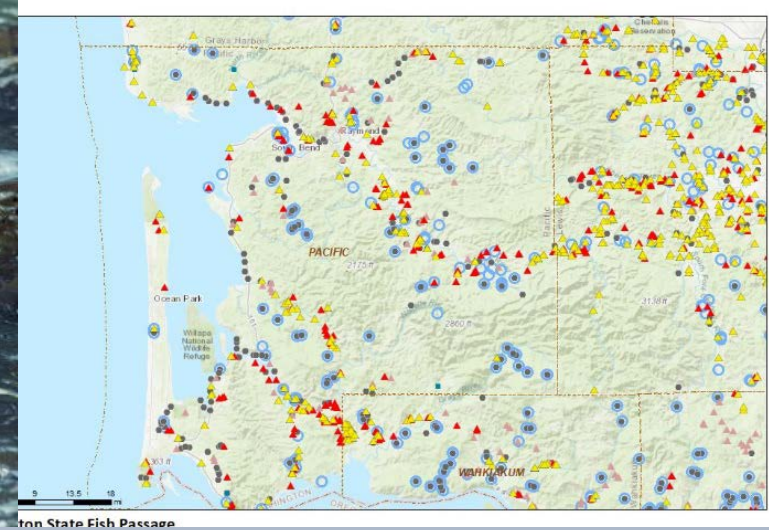
### The Workgroup

At its April 2019 meeting, the Pacific Fishery Management Council (PFMC) established a joint workgroup with NOAA Fisheries to help assess the impacts of Council-area fisheries on Southern Residents. The workgroup will consider how fishery impacts might be limited on Chinook salmon stocks that are important to the Southern Residents. The workgroup will conduct a review of the fisheries and report back with recommendations by the November 2019 PFMC meeting, in time to incorporate potential necessary changes into the development of the PFMC's recommended 2020 ocean salmon fishery management measures done at its March and April 2020 meetings.



Questions?





# Status of Salmon on the Washington Coast



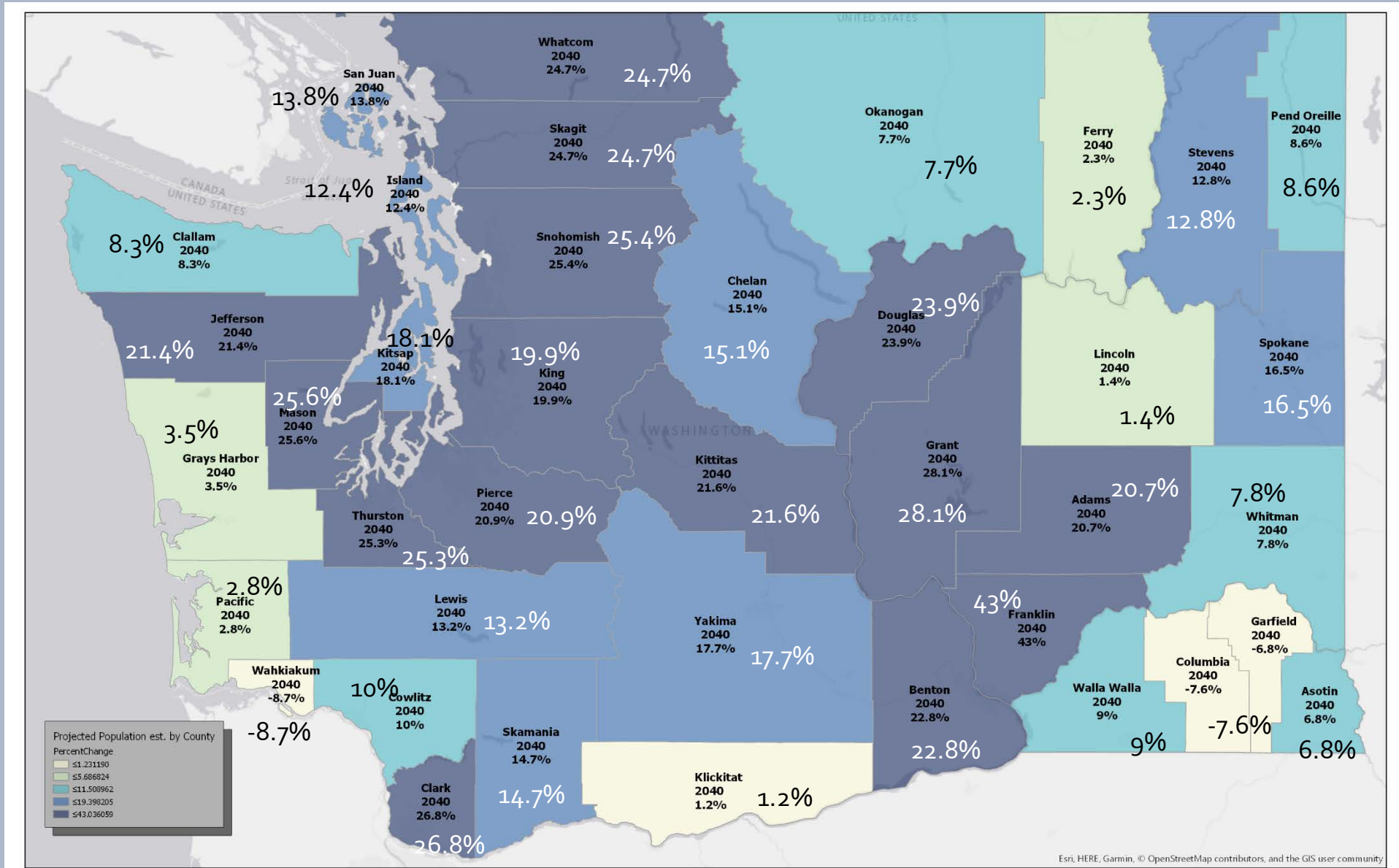
Washington  
Department of  
**FISH and  
WILDLIFE**

Nicole Czarnomski, Ph.D.

Acting Division Manager

Energy, Major Projects, and Restoration

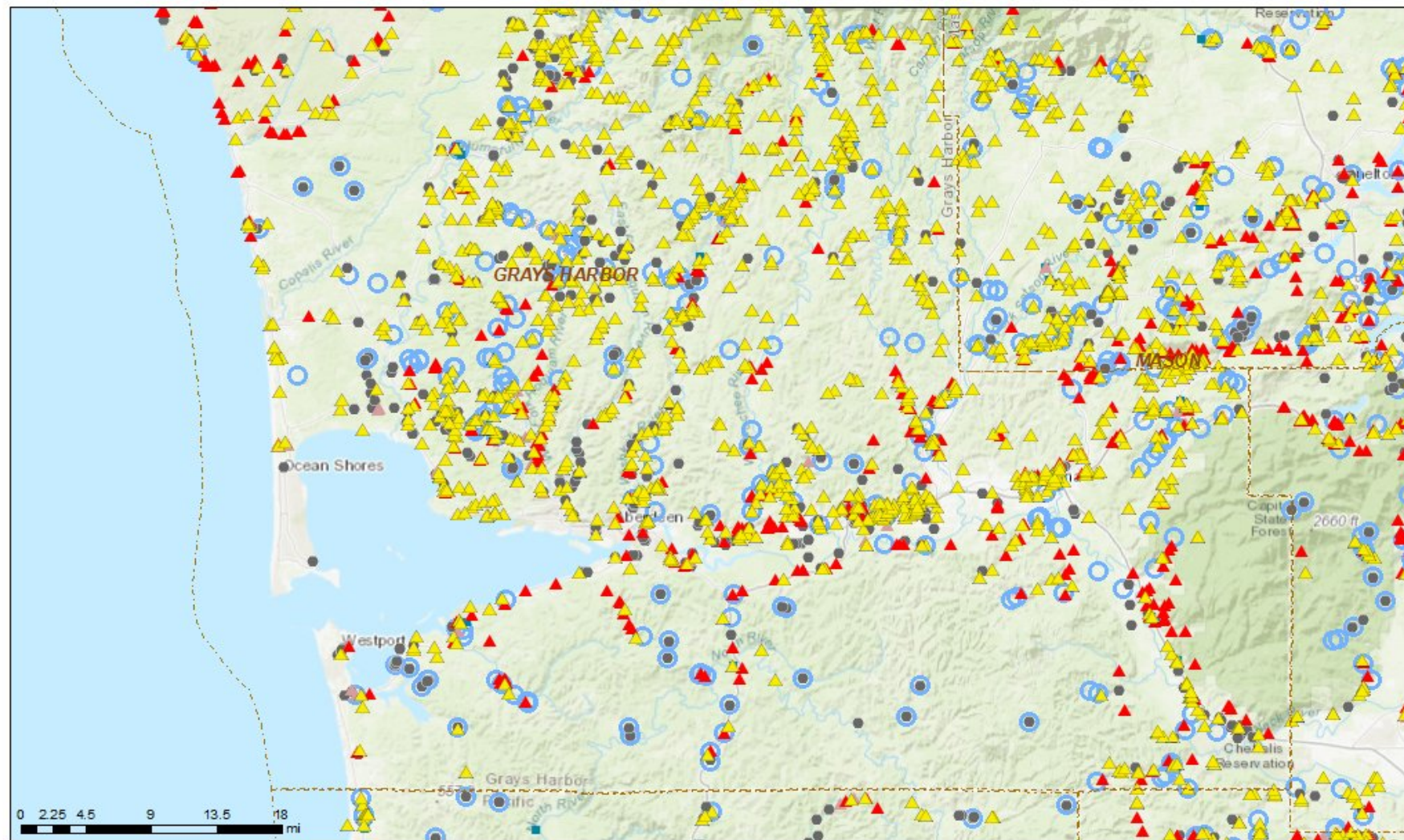
# The #1 challenge for conserving species & habitat





Affects on the landscape

# Barriers to fish passage



## Washington State Fish Passage



Washington  
Department of  
**FISH and  
WILDLIFE**

- County
- Partial Fish Passage Blockage
- Total Fish Passage Blockage
- Barrier, Unknown
- Percent Passable
- Diversion
- Unknown
- Corrected Barriers



# Land use and forest management



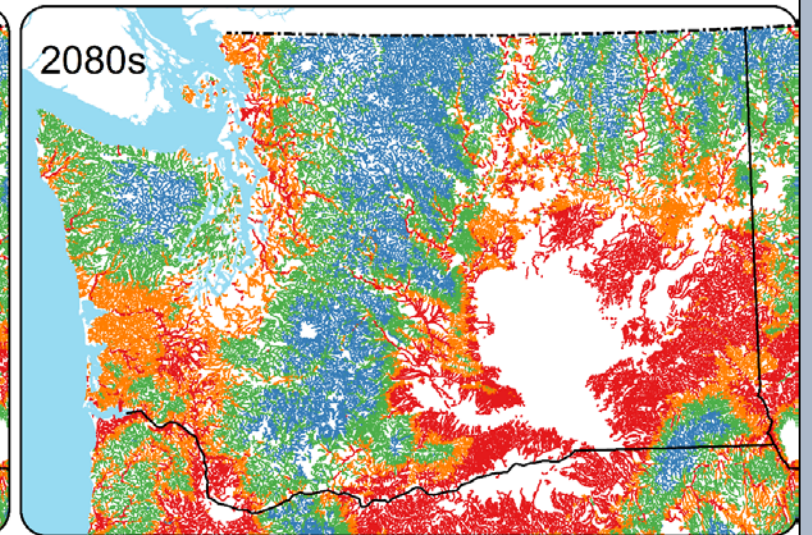
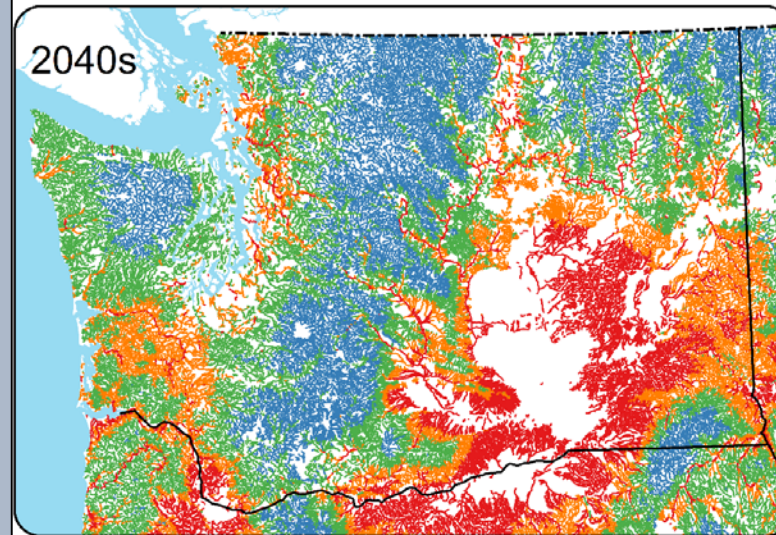
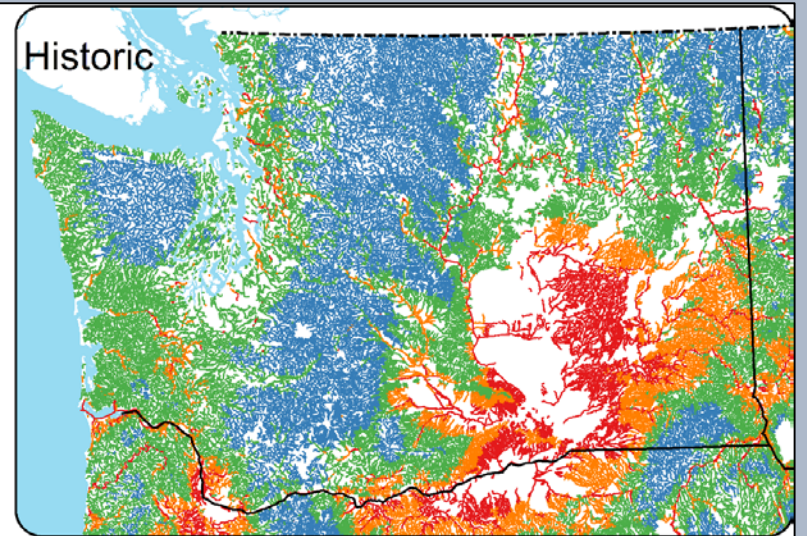
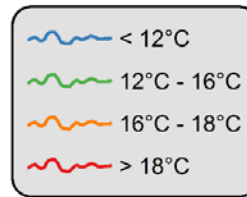
Aberdeen, WA (photo by: Windermere Realty 2019)



Washington forestry (photo by: Kelly O 2014)

# Climate change

## Stream Temperatures

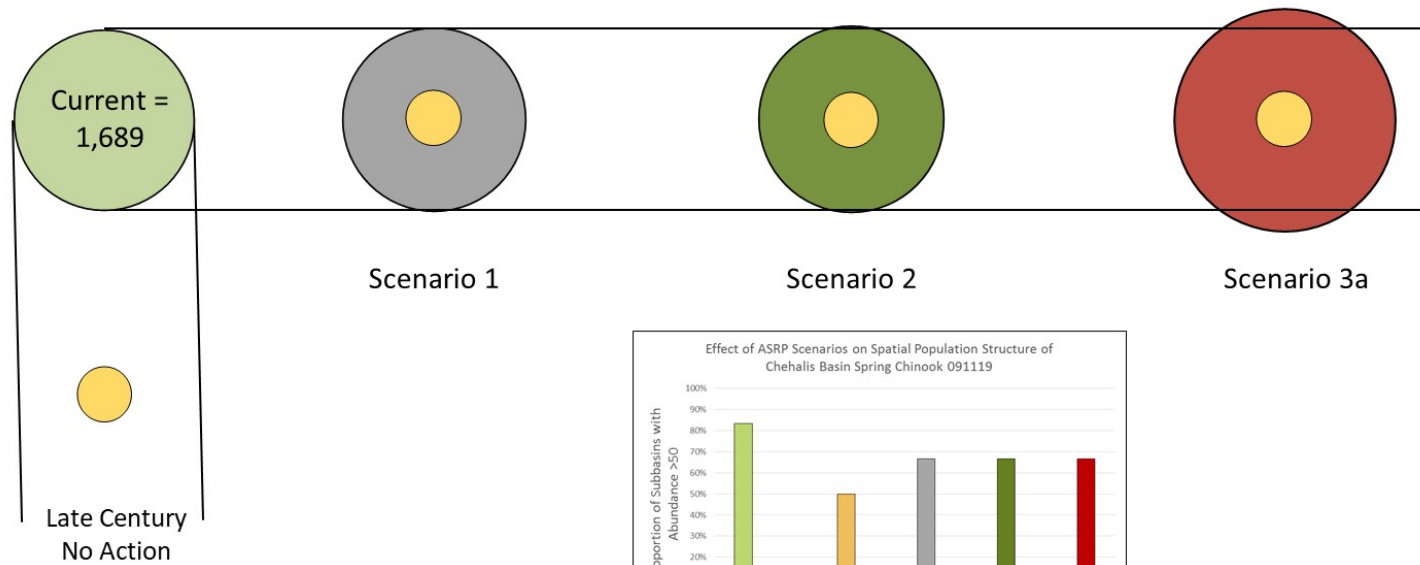


Aug mean air temp – moderate (A1B) warming scenario

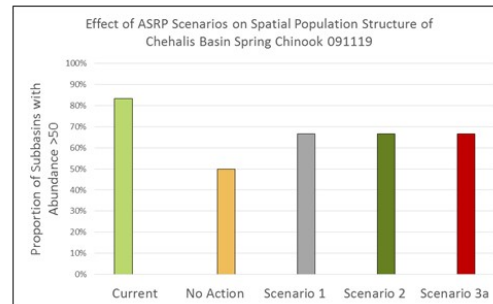
Data source: Norwest; figure source: Climate Impacts Group (Rob Norheim)

# Potential future for spring Chinook in the Chehalis Basin\*\*

## Effect of ASRP Scenario on Spring Chinook Salmon Abundance in Late Century



Circles indicate relative abundance of adult salmon



091119 results

\*\*Note that these results are preliminary. For final results, please see the Chehalis Basin Strategy's Aquatic Species Restoration Plan (ASRP) due out mid-November 2019.



# So what can we do about it? And why?



Large wood on the Humptulips



Upper East Fork Satsop wetland complex

# Partnerships in land use management

The screenshot shows the 'Forests & Fish' website. The header includes the site name and navigation links: HOME, ENVIRONMENTAL PROTECTION, SUSTAINABLE FORESTRY, GUIDED BY SCIENCE, and ABOUT. Social media icons for Facebook, Twitter, and YouTube are also present. The main banner features a large image of salmon swimming in a river, with the text 'SALMON RECOVERY: A SHARED RESPONSIBILITY ACROSS OUR LANDSCAPE'. Below the banner is a horizontal bar with six categories: WORKING WATERFRONT, URBAN & INDUSTRIAL, RESIDENTIAL, RURAL & AGRICULTURAL, WORKING FORESTS, and FEDERAL LANDS. Each category is accompanied by a white silhouette icon representing that land use type. Below the categories is a paragraph of text: 'Pacific salmon, and the many streams and rivers they inhabit, are Northwest icons. Throughout their lives, salmon travel hundreds of miles, from high mountain lakes to the ocean. Private forest landowners share in the responsibility for protecting our mountain-to-sea environment.'

# Habitat protection

Ch. 40.]

SESSION LAWS, 1943.

79

## CHAPTER 40.

[ S. B. 61. ]

### PROTECTION OF FISH LIFE.

AN ACT relating to the protection of fish life, requiring written approval of certain officers before constructing any hydraulic project; defining offenses and providing penalties.

*Be it enacted by the Legislature of the State of Washington:*

SECTION 1. In the event that any person, firm, corporation or government agency desires to construct any form of hydraulic project or other project that will use, divert, obstruct or change the natural flow or bed of any river or stream or that will utilize any of the waters of the state or materials from the stream beds, such person, firm, corporation or government agency shall submit to the Department of Fisheries and the Department of Game full plans and specifications of their proposed construction or work, complete plans and specifications for the proper protection of fish life in connection therewith, the approximate date when such construction or work is to commence and shall secure the written approval of the Director of Fisheries and the Director of Game as to the adequacy of the means outlined for the protection of fish life in connection therewith and as to the propriety of the proposed construction or work and time thereof in relation to fish life, before commencing construction or work thereon. If any person, firm, corporation or government agency shall commence construction on any such works or projects without first providing plans and specifications subject to the approval of the Director of Fisheries and the Director of Game for the proper protection of fish life in connection therewith and without first having obtained written approval of the Director of Fisheries and the Director of Game as to the adequacy of such plans and speci-

Directors of  
Fisheries and  
Game  
to approve  
plans.

Penalty for  
violation.



# Habitat restoration actions



# Habitat restoration as a tool in recovery



Bear River Estuary, Willapa National Wildlife Refuge (photo credit: USFWS)



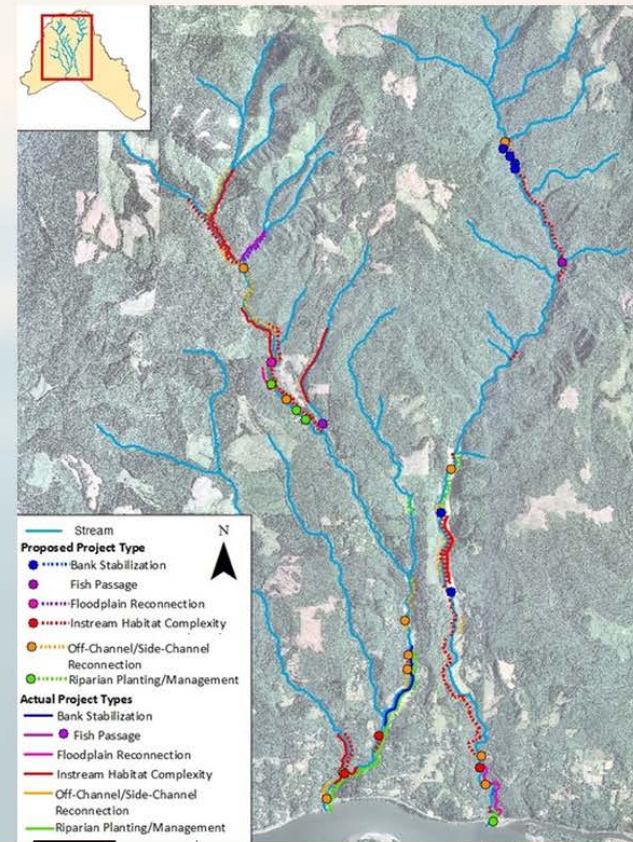
# Example – Abernathy Intensively Monitored Watershed

## Lower Columbia Intensively Monitored Watershed Mill - Abernathy - Germany Complex

The purpose of the IMW program is to determine whether restoration projects measurably increase salmonid production. This information will be used in adaptively managing restoration efforts and updating recovery plans. The IMW effort in the MAG complex involves 2 interrelated elements:


- Monitoring fish populations and habitat conditions in both the treatment and control watersheds by the IMW Monitoring Team led by the WA Department of Ecology and WDFW; and
- Conducting extensive habitat restoration work in the Abernathy Creek and nutrient enhancement in Germany Creek. The habitat restoration work is coordinated by the Lower Columbia Fish Recovery Board (LCFRB).

Monitoring to establish baseline conditions began in 2003 using funding from the Salmon Recovery Funding Board (SRFB). An IMW experimental design plan was completed in 2007 to guide monitoring activities. In January 2009, the LCFRB completed the IMW restoration treatment plan



# Example - Yakima Basin Integrated Plan

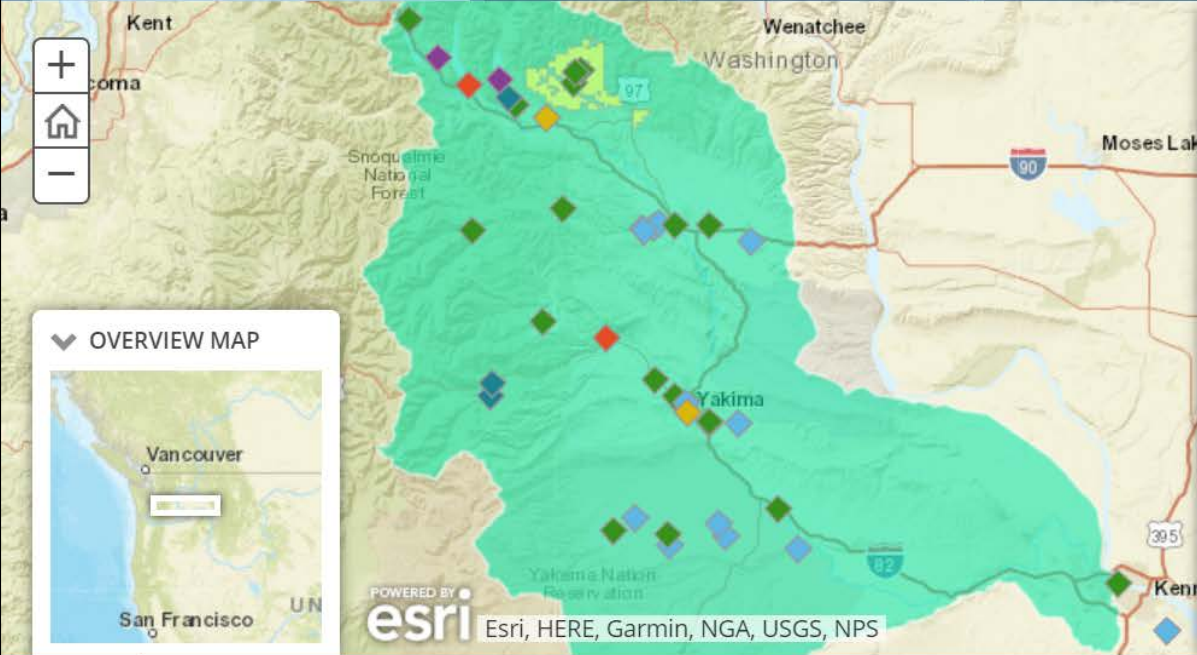
**Water for People, Farms, and Fish**

Developing Water Supply Facebook Twitter LinkedIn  **DEPARTMENT OF ECOLOGY**  
State of Washington

Yakima Basin Integrated Plan
Seven Elements
Initial Development Projects

**The Yakima Basin Integrated Plan**

The Yakima Basin Integrated Plan
Fish Passage
Water Conservation
Habitat Enhancement
Structural and Operational Changes
Surface Storage
☰



Map showing the Yakima Basin Integrated Plan project locations. The basin is highlighted in green. Project locations are marked with colored diamonds: green for Habitat Enhancement, blue for Water Conservation, teal for Fish Passage, yellow for Groundwater Storage, and purple for Structural and Operational. Major cities like Kent, Wenatchee, and Yakima are labeled. The map is powered by Esri.

**LEGEND**

WA\_State\_Bndy

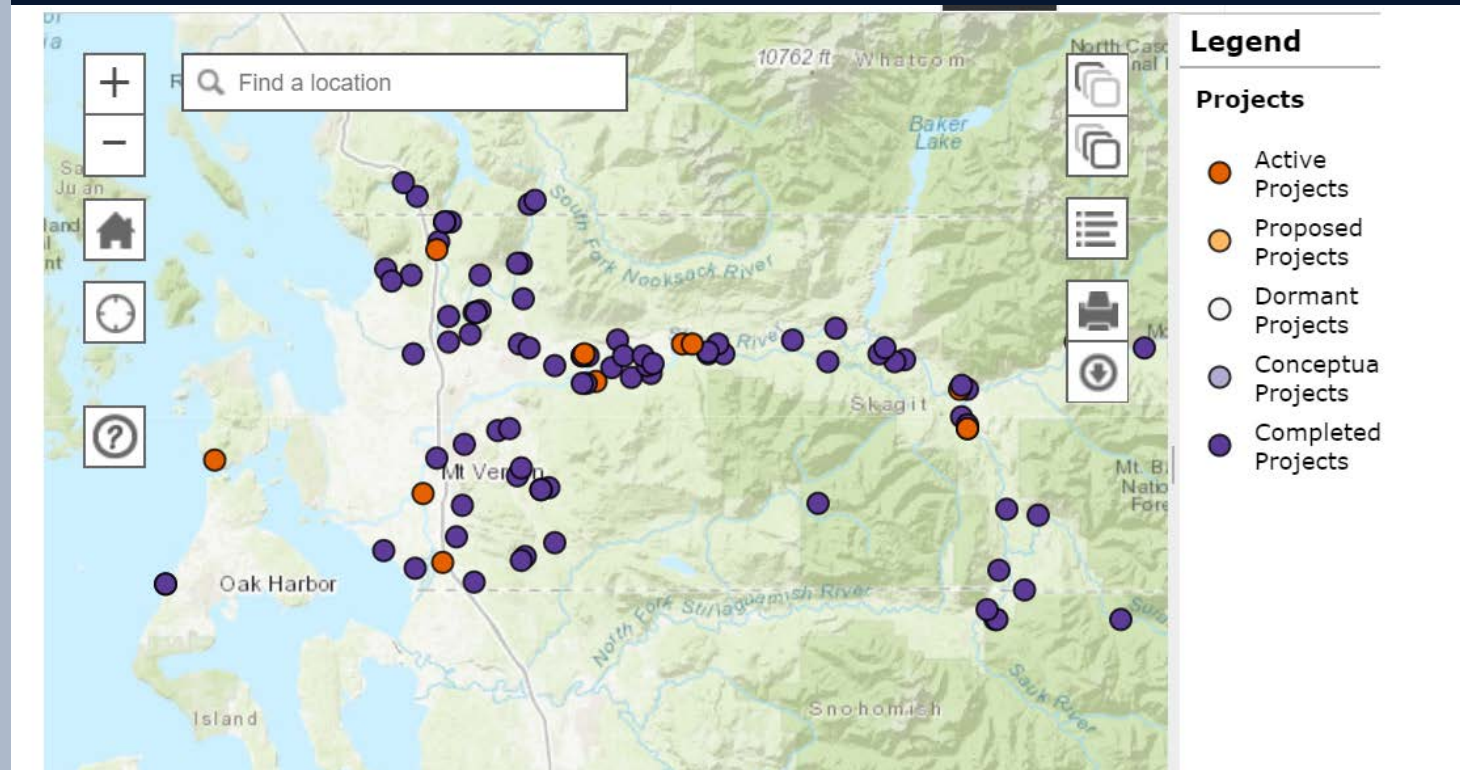
YBIP projects

- ◆ Habitat Enhancement
- ◆ Water Conservation
- ◆ Fish Passage
- ◆ Groundwater Storage
- ◆ Structural and Operational

## The Yakima Basin Integrated Plan: Holistic Watershed Management

The Yakima Basin Integrated Plan (Integrated Plan) is a common sense solution to water shortages in Washington State's Yakima River Basin that will protect lands and waters, improve water quality, restore salmon and steelhead populations and meet the needs of producers and industries drive our economy. The Integrated Plan is a 30-year package of projects broken into three 10-year phases. The first of these, the Initial Development Phase (IDP), is underway now. Priority IDP

# Example: Skagit Watershed





# Results of habitat restoration





# Future opportunities



# Hatchery Management and Columbia River Mitigation

Eric Kinne – Hatchery Division Manager  
October 2, 2019



Washington  
Department of  
**FISH and  
WILDLIFE**

# Outline

Brief History of Hatcheries

Mitigation

Production

Southern Resident Orca



# Salmon of the Pacific Northwest

Prior to 1900, abundance legendary

Important protein on international scale

First dramatic collapse evident just prior to turn of century

- Over-fishing
- Land and water use practices





# First Salmon Hatcheries - WDFW

## Columbia River

- Kalama Hatchery in 1895

## Puget Sound

- Baker River in 1896
- Five more by 1900



# Why Hatcheries

## Harvest demand

- inexpensive protein

## Conservation

- Reintroduction
- Protection of listed stocks

## Mitigation

- Hydro Projects
- Altered Waterways and Blockages
- Lost Habitat
- Toxic Spills



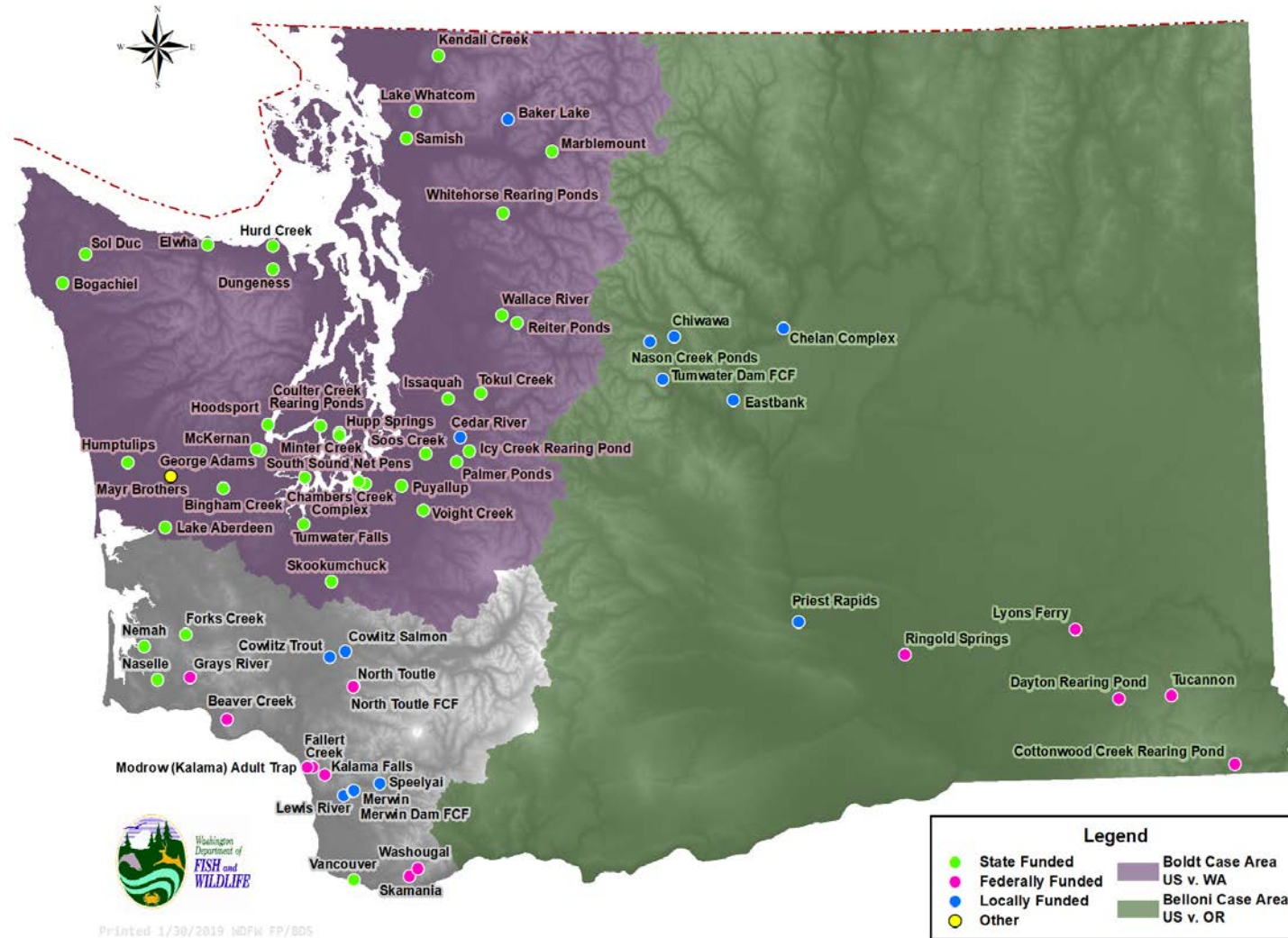
# Why do we have this Hatchery Production in the Columbia River?

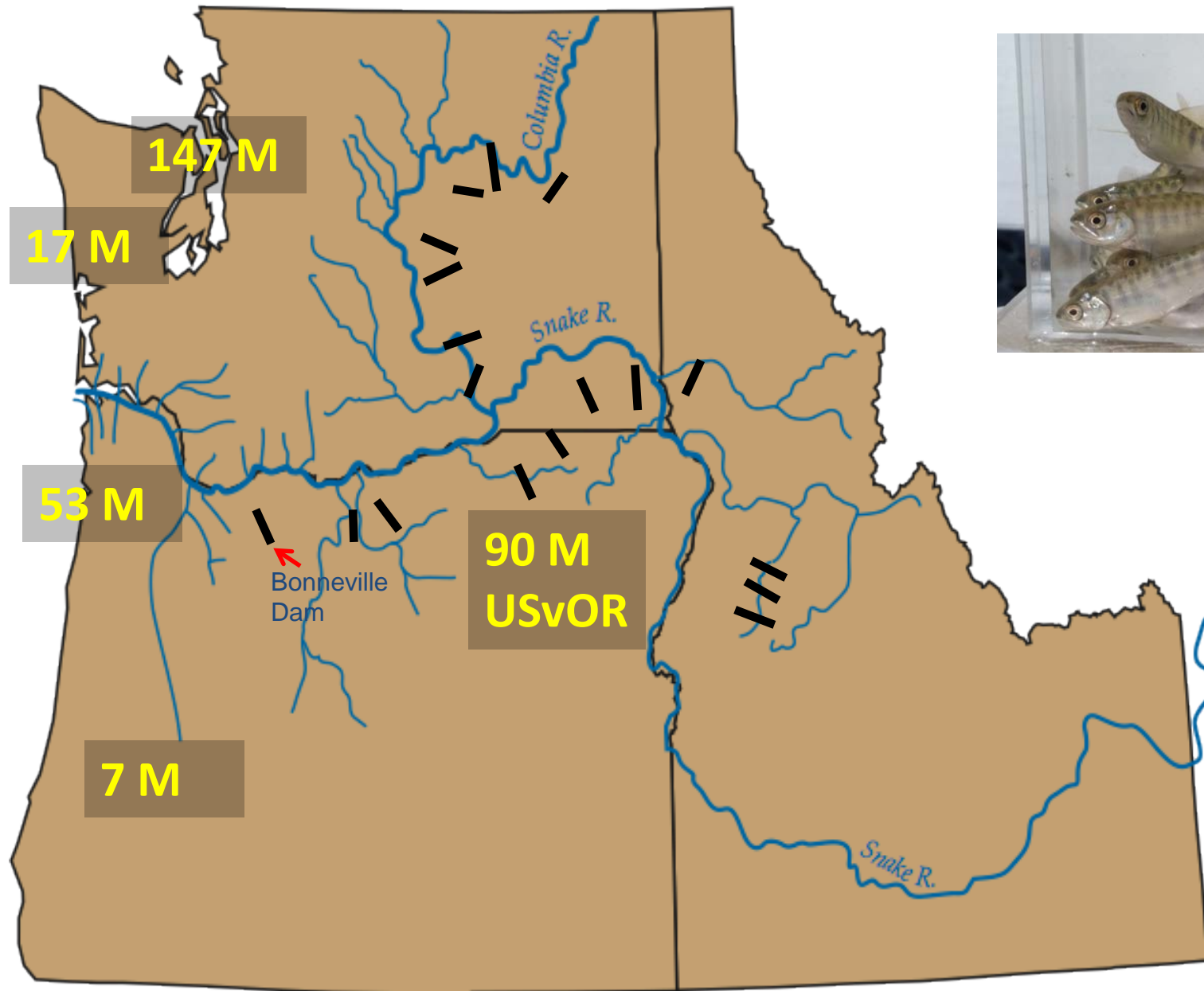


Authorization/Funding Source	Mitigation
Lower Snake River Compensation Plan (BPA)	Lower Granite, Little Goose, Lower Monumental, Lower Granite Dams
Columbia Basin Fish and Wildlife Program (BPA)	Federal Columbia River Power System (Bonneville, John Day, The Dalles, Chief Joseph, McNary)
Idaho Power Company	Hells Canyon, Oxbow, Brownlee Dams
U.S. Fish and Wildlife Service	Mitigation for Columbia River development
Bureau of Reclamation	Grand Coulee Dam
Corps of Engineers	John Day/The Dalles Mitigation, Dworshak Dam & 13 Upper Willamette River projects
Mitchell Act	Ongoing and future development of the Columbia River basin (Bonneville Dam)
Mid Columbia Public Utility Districts (PUDs)	Wells, Rock Island, Rocky Reach, Priest Rapids, Wanapum Dams
Portland General Electric	Bull Run, Faraday, North Fork, Oak Grove, Pelton, River Mill, Round Butte, Sullivan Dams
Tacoma Public Utilities/Lewis PUD	Cowlitz Falls, Mayfield, Mossyrock Dams
Pacificorp Energy	Merwin, Yale, Swift #1, Swift #2 Dams

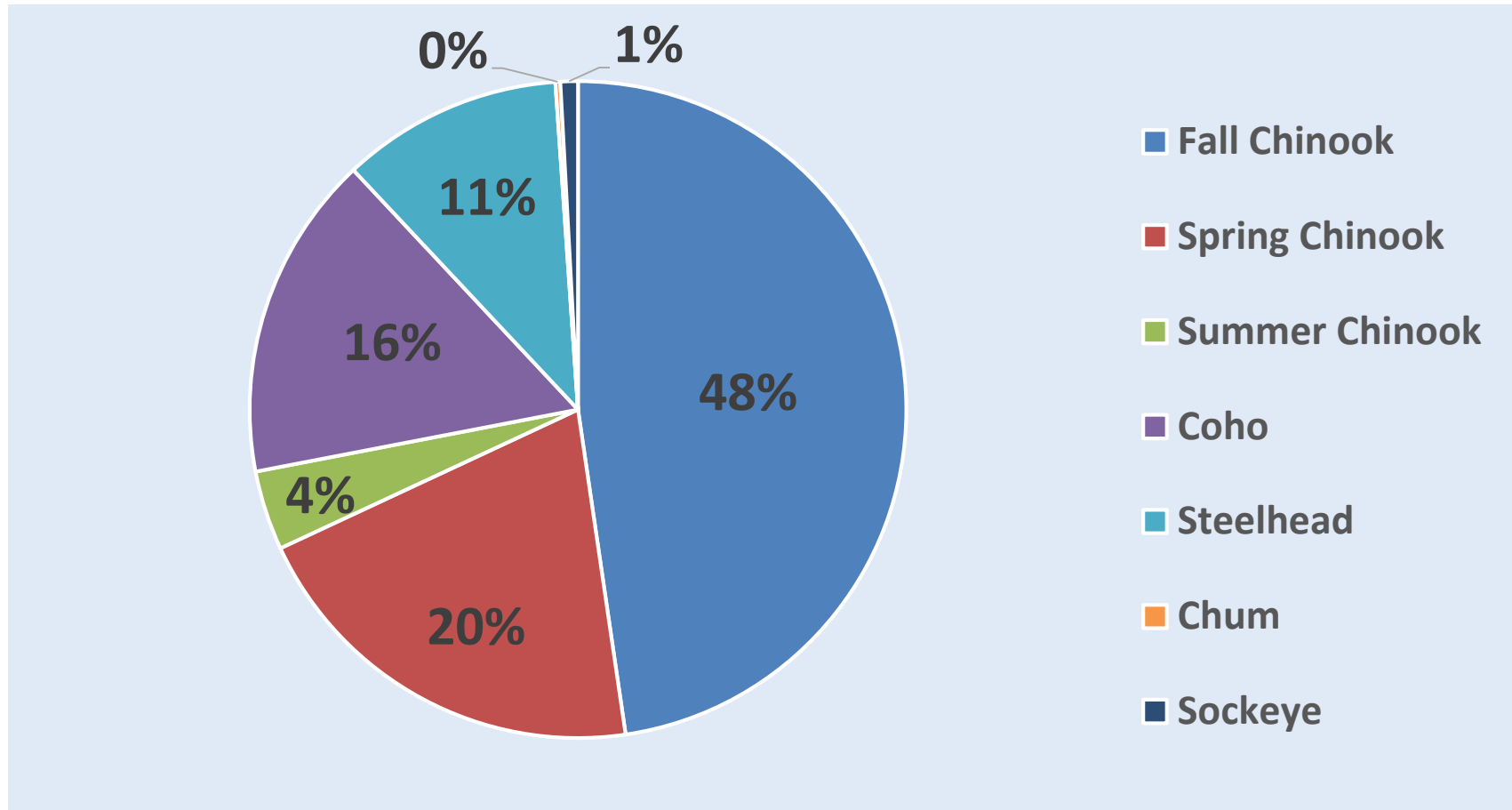


# Washington Department of Fish and Wildlife State - Tribal Salmon Management Agreement





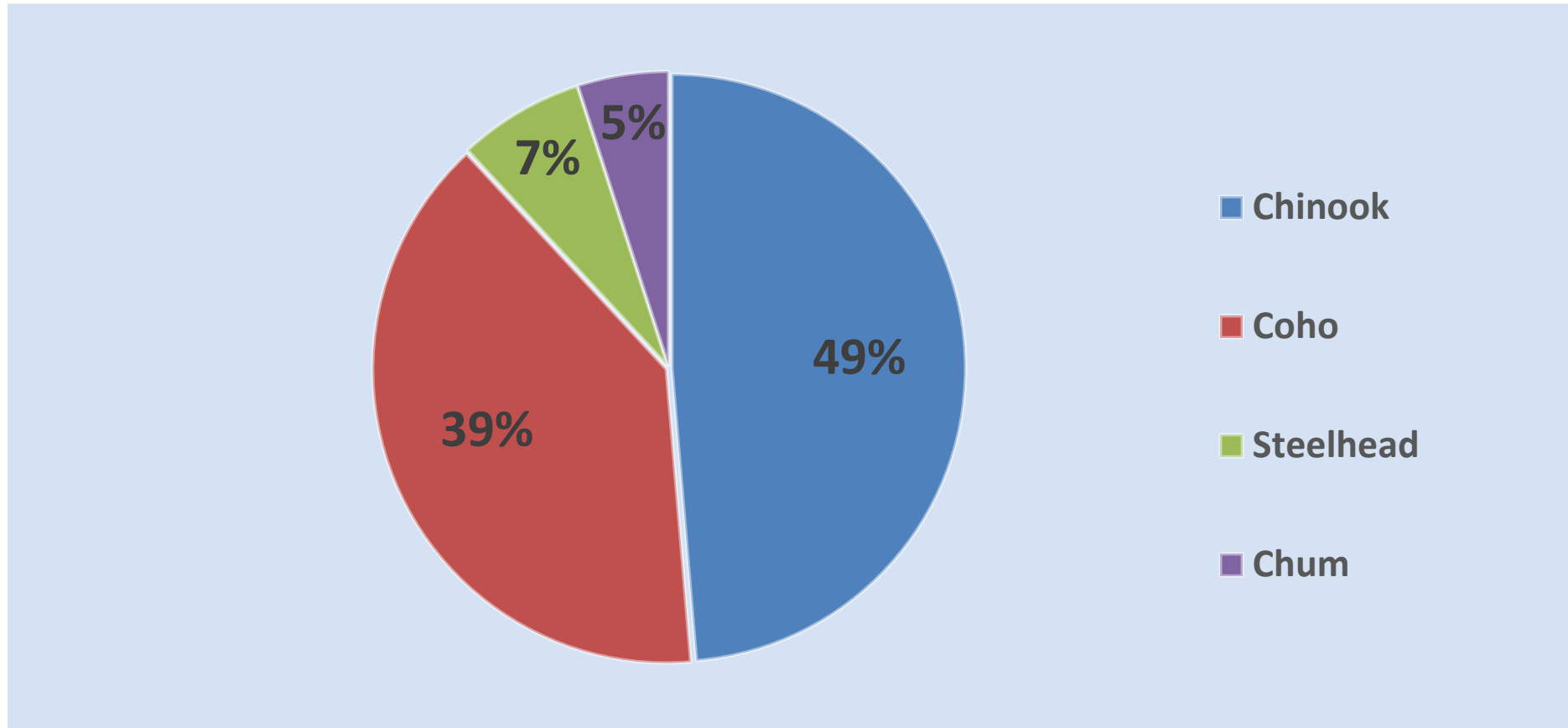
# How many hatchery fish are produced in the Columbia River?



Approximately 143 million salmon and steelhead juveniles are produced and released annually from hatcheries in the Columbia Basin (mouth to headwaters).



# How many hatchery fish are produced in Coastal WA?



Approximately 17 million salmon and steelhead juveniles are produced and released annually from WDFW hatcheries in Coastal Washington.

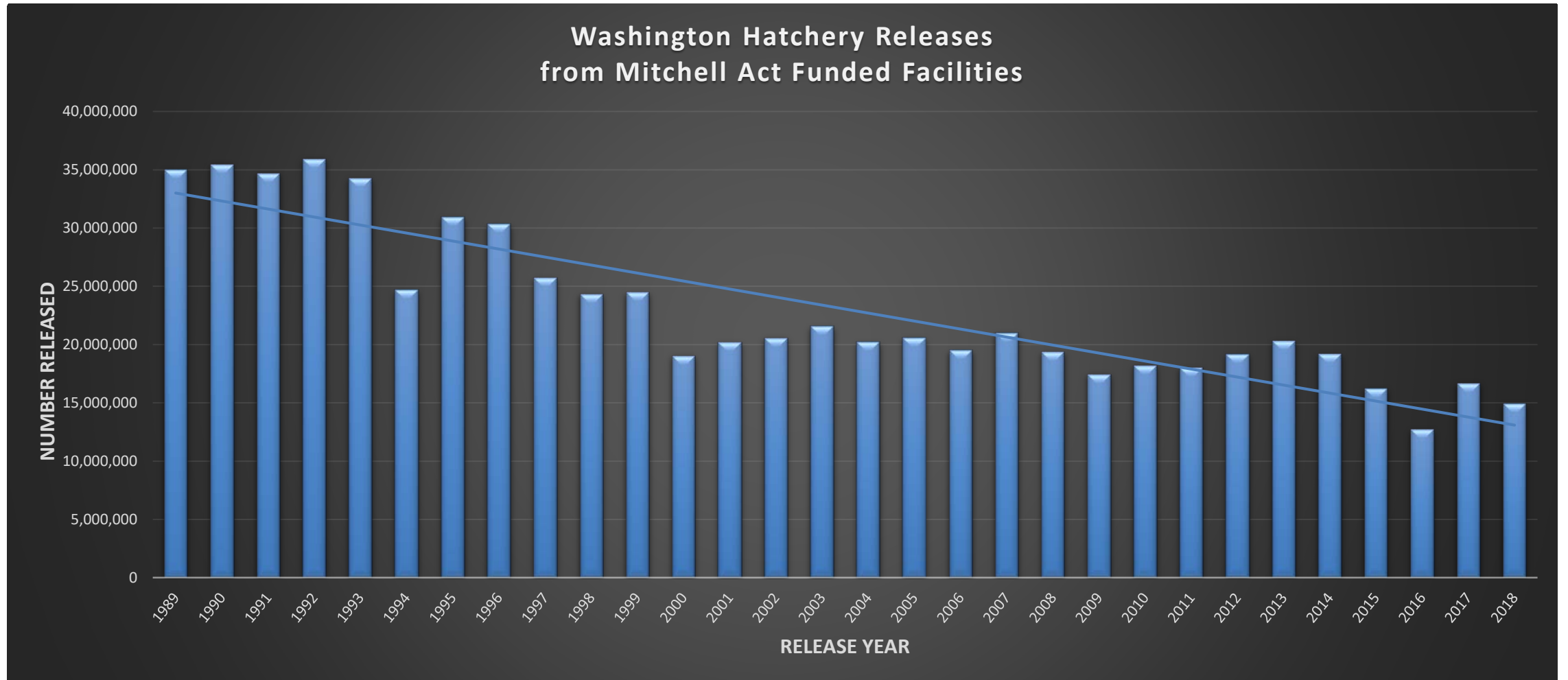


# Mitchell Act Funded Hatcheries

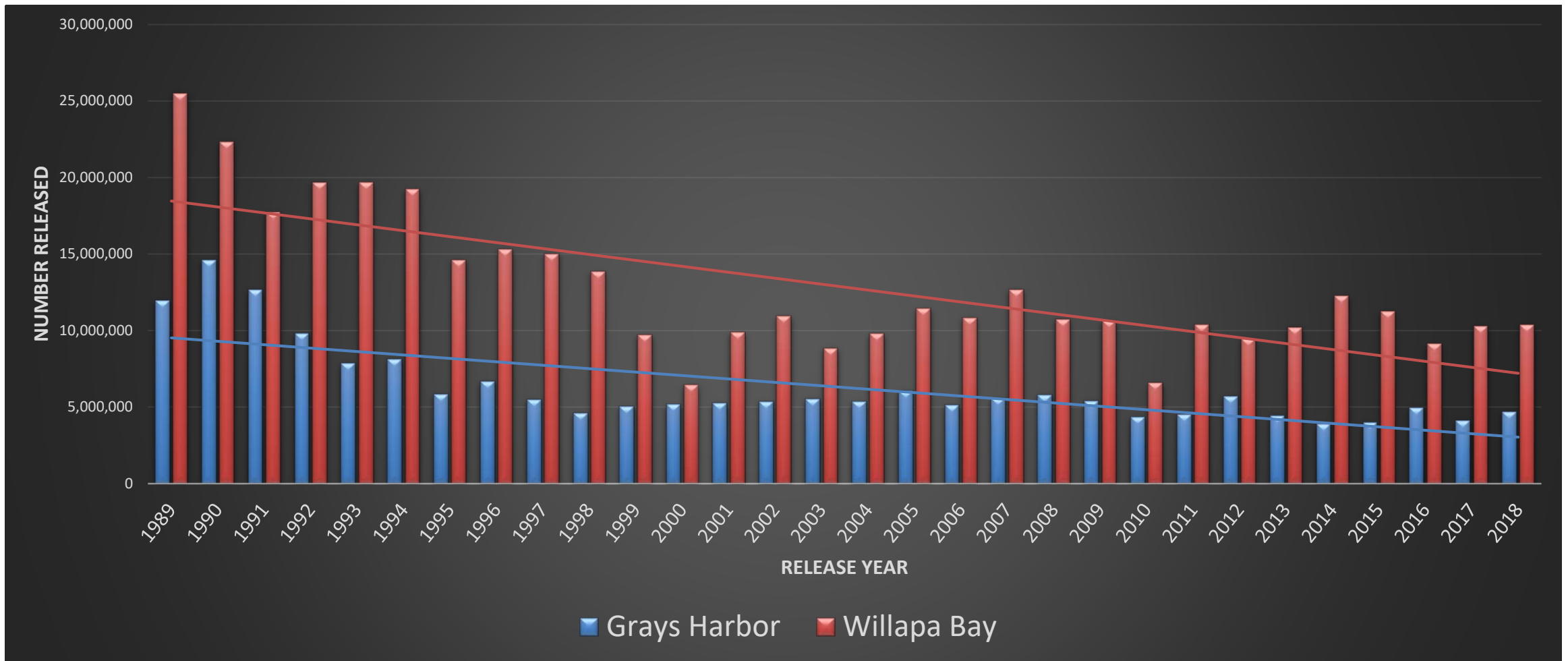




# Mitchell Act Production



# WDFW Hatchery Releases- Grays Harbor and Willapa Bay



# Southern Resident Orca



# Southern Resident Orca

- Increase Hatchery production to provide additional prey source for Southern Resident Orcas
- Hatchery Pilot Studies – SAR, size and timing of returns



# Agency Tool (Chinook)

## Outline of Prey Prioritization Conceptual Model

### Weight and Scoring

- Factor 1 – Observed part of Diet
- Factor 2 – Consumed During Reduced Body Condition or Diversified SRKW Diet (October – May)
- Factor 3 – Degree of Spatial and Temporal Overlap



## Priority Chinook Stocks Using Conceptual Model

ESU / Stock Group	Run Type	Rivers or Stocks in Group	Diet Contribution Score (0,1)	Killer Whale Reduced Body Condition or Diverse Diet Score (0,1)	Spatio-Temporal Overlap Score (0 - 3)	
			Avg. Factor 1 (see note)	Avg. Factor 2 (see note)	Avg. Factor 3	Total Score (sum of factors)
Northern Puget Sound	Fall	Nooksack, Elwha, Dungeness, Skagit, Stillaguamish, Snohomish	1	1	3.00	5.00
Southern Puget Sound	Fall	Nisqually, Puyallup, Green, Duwamish, Deschutes, Hood Canal systems	1	1	3.00	5.00
Lower Columbia	Fall	Fall Tules and Fall Brights (Cowlitz, Kalama, Clackamas, Lewis, others)	1	1	2.63	4.63
Strait of Georgia	Fall	Lower Strait (Cowichan, Nanaimo), Upper Strait (Klinaklini, Wakeman, others), Fraser (Harrison)	1	1	2.63	4.63
Upper Columbia & Snake Fall	Fall	Upriver Brights	1	1	2.25	4.25
Fraser	Spring	Spring 1.3 (upper Pitt, Birkenhead; Mid & Upper Fraser; North and South Thompson) and Spring 1.2 (Lower Thompson, Louis Creek, Bessette Creek)	1	1	2.25	4.25
Lower Columbia	Spring	Lewis, Cowlitz, Kalama, Big White Salmon	1	1	2.25	4.25
Middle Columbia	Fall	Fall Brights	1	1	2.06	4.06
Snake River	Spring-Summer	Snake, Salmon, Clearwater	1	1	1.88	3.88
Northern Puget Sound	Spring	Nooksack, Elwha, Dungeness, Skagit (Stillaguamish, Snohomish)	1	1	1.88	3.88
Washington Coast	Spring	Hoh, Queets, Quillayute, Grays Harbor	1	1	1.69	3.69
Washington Coast	Fall	Hoh, Queets, Quillayute, Grays Harbor	1	1	1.69	3.69
Central Valley	Spring	Sacramento and tributaries	1	1	1.50	3.50
Middle & Upper Columbia Spring	Spring	Columbia, Yakima, Wenatchee, Methow, Okanagan	1	1	1.31	3.31
Middle & Upper Columbia Summers	Summer		1	1	1.31	3.31

Fraser	Summer	Summer 0.3 (South Thompson & lower Fraser; Shuswap, Adams, Little River, S. Thompson mainstem, Maria Slough in Lower Fraser) and Summer 1.3 (Nechako, Chilko, Quesnel; Clearwater River in North Thompson)	1	0	1.88	2.88
Central Valley	Fall and Late Fall	Sacramento, San Joaquin	1	1	0.75	2.75
Klamath River	Fall	Upper Klamath and Trinity	1	1	0.75	2.75
Klamath River	Spring	Upper Klamath and Trinity	1	1	0.75	2.75
Upper Willamette	Spring	Willamette	0	0	2.25	2.25
Southern Puget Sound	Spring	Nisqually, Puyallup, Green, Duwamish, Deschutes, Hood Canal systems	0	0	1.88	1.88
Central Valley	Winter	Sacramento and tributaries	0	0	1.50	1.50
North & Central Oregon Coast	Fall	Northern (Siuslaw, Nehalem, Siletz) and Central (Coos, Elk, Coquille, Umpqua)	0	0	1.41	1.41
West Coast Vancouver Island	Fall	Robsertson Creek, WCVI Wild	1	0	0.38	1.38
Southern Oregon & Northern California Coastal	Fall	Rogue, Chetco, Smith, lower Klamath	0	0	0.75	0.75
Southern Oregon & Northern California Coastal	Spring	Rogue	0	0	0.75	0.75
California Coastal	Fall	Mad, Eel, Russian	0	0	0.75	0.75
California Coastal	Spring	Mad, Eel, Russian	0	0	0.75	0.75
Southeastern Alaska	Spring	Taku, Situk, Chilkat, Chickamin, Unuk, Alsek, Stikine	0	0	0.00	0.00
Northern BC	Spring	Yakoun, Skeena, Nass	0	0	0.00	0.00
Central BC	mostly Summer	Atnarko, Dean River, Rivers Inlet	0	0	0.00	0.00

Note: Factor 1 and 2 are not literal averages. If a major component of the rivers in the ESU / Stock group had 1 then this was scored a 1. If no major component was scored a 1, this was scored a 0

# SR Orca Hatchery Production – 2019 releases

Production Increases for 2019 Release Year				
Facility Name	Operator	Species	Current Program	Production Increase
Kendall	WDFW	Spring Chinook	200,000	500,000
Whatcom Cr.	WDFW/Bellingham Tech College	Fall Chinook	0	500,000
Samish	WDFW	Fall Chinook	4,000,000	1,000,000
Wallace River	WDFW	Summer Chinook	1,500,000	200,000
Soos/Palmer	WDFW	Fall Chinook	4,200,000	2,000,000
Marblemount	WDFW	Spring Chinook	787,500	400,000
MarbleMount	WDFW	Coho	500,000	250,000
South Sound Net Pens	WDFW	Coho	1,100,000	300,000
Lewis River	WDFW	Spring Chinook	1,350,000	900,000
Forks Creek	WDFW	Spring Chinook	0	550,000
Dungeness	WDFW	Coho	500,000	300,000
Sol Duc	WDFW/ Quileute Tribe	Summer Chinook	70,000	530,000
Sol Duc	WDFW/ Quileute Tribe	Summer Chinook	250,000	50,000
Bear Springs	Quileute Tribe	Summer Chinook	60,000	75,000
<b>Total production</b>			<b>14,517,500</b>	<b>7,555,000</b>





# SR Orca Hatchery Production – 2019-2021

SRKW/Enhance Salmon Production Proposal - 2019 Brood Year						
Facility Name	Species	Increased Proposal	FPP	Broodsource	Rearing Facility	Release Facility
Kendall	Sp. CK	500,000	80	Kendall	Kendall	Kendall
Whatcom Cr.	F. CK	500,000	80	Samish	Whatcom Cr.	Whatcom Cr.
Hupp Springs	Sp. CK	500,000	80	Minter	Hupp	Hupp
Samish	F. CK	1,000,000	80	Samish	Samish	Samish
Wallace River	Sum. CK	400,000	70	Wallace River	Wallace River	Wallace River
Wallace River	Sum. CK	100,000	8	Wallace River	Wallace River	Wallace River
Soos/Palmer	F. CK	2,000,000	80	Green River	Palmer	Palmer
Marblemount	Sp. CK	400,000	8	Marblemount	Marblemount	Marblemount
Sol Duc	Sum. CK	500,000	50	Sol Duc	Sol Duc/Bear Springs	Sol Duc
Sol Duc	Sum. CK	150,000	8	Sol Duc	Sol Duc/Bear Springs	Sol Duc
Humptulips	F. CK	500,000	80	Humptulips	Humptulips	Humptulips
Minter	F. CK	400,000	80	Minter	Minter	Minter
Naselle	F. CK	2,500,000	80	Naselle	Naselle	Naselle
Forks Creek	F. CK	50,000	80	Forks Creek	Forks Creek	Forks Creek
Beaver Creek	coho	225,000	16	Grays River	Beaver Creek	Beaver Creek
Ringold	coho	250,000	16	Kalama	Kalama/Ringold	Ringold
Marblemount	coho	500,000	17	Marblemount	Marblemount	SS NP
Wallace	coho	100,000	17	Wallace	Wallace	SS NP
Wallace	coho	150,000	17	Wallace	Wallace	Wallace
Kendall	coho	200,000	17	Kendall	Kendall	Kendall
Marblemount	coho	250,000	17	Marblemount	Marblemount	Marblemount
Humptulips	coho	500,000	17	Humptulips	Humptulips	Humptilips
Forks Creek	coho	300,000	17	Forks Creek	Forks Creek	Forks Creek
Nemah	chum	1,000,000	450	Nemah	Nemah	Nemah
Wallace River	chum	1,000,000	400	Skykomish	Wallace	Wallace
Kendall	chum	500,000	400	Kendall	Kendall	Kendall
Hood Canal	chum	3,000,000	400	Hood Canal	Hood Canal	Hood Canal
Totals		17,475,000				



# Tribal SR Orca Hatchery Production 2019-2021

<b>Tribal Funding Request for Task Force Recommendation #6</b>		
<b>Tribe</b>	<b>Species</b>	<b>Number of Fish</b>
Quinault	Fall CK	500,000
Tulalip	Pilot Studies	-
Quileute	Summer CK	70,000
Puyallup	Fall CK	1,075,200
Puyallup	chum	1,000,000
Port Gamble S'Klallam Tribe	coho	400,000
Muckleshoot	Spring CK	200,000
Squaxin	coho	800,000
Squaxin	Fall CK	500,000
Skokomish	chum	1,500,000
Lummi Nation	Spring CK	500,000
Lummi Nation	Early Fall CK	1,000,000
Yakama Nation	Fall CK	1,000,000
<b>Totals</b>		<b>8,545,200</b>

<b>Spring CK</b>	<b>700,000</b>
<b>Fall CK</b>	<b>4,075,200</b>
<b>Summer CK</b>	<b>70,000</b>
<b>coho</b>	<b>1,200,000</b>
<b>chum</b>	<b>2,500,000</b>
<b>Total</b>	<b>8,545,200</b>



# Questions



# Salmon Recovery in Washington



**Erik Neatherlin**



WASHINGTON STATE  
RECREATION AND CONSERVATION OFFICE

Governor's Salmon  
Recovery Office

# Why Recover Salmon

- **Form the Fabric of the Pacific Northwest**
- **Treaty Tribe Obligations**
- **Indicators of Ecosystem Health**
- **Critical to Regional and Local Economies**
- **Legal Obligation under Federal Endangered Species Act**

# 1991 First Salmon ESA Listed in Pacific NW ...Garnered National Attention

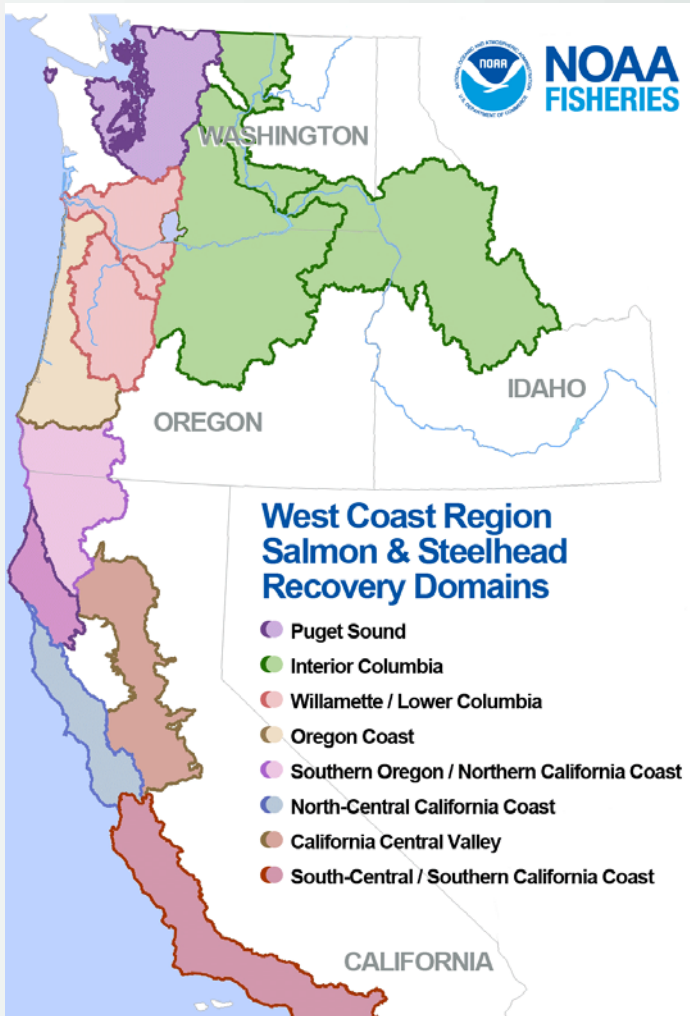


**The New York Times**

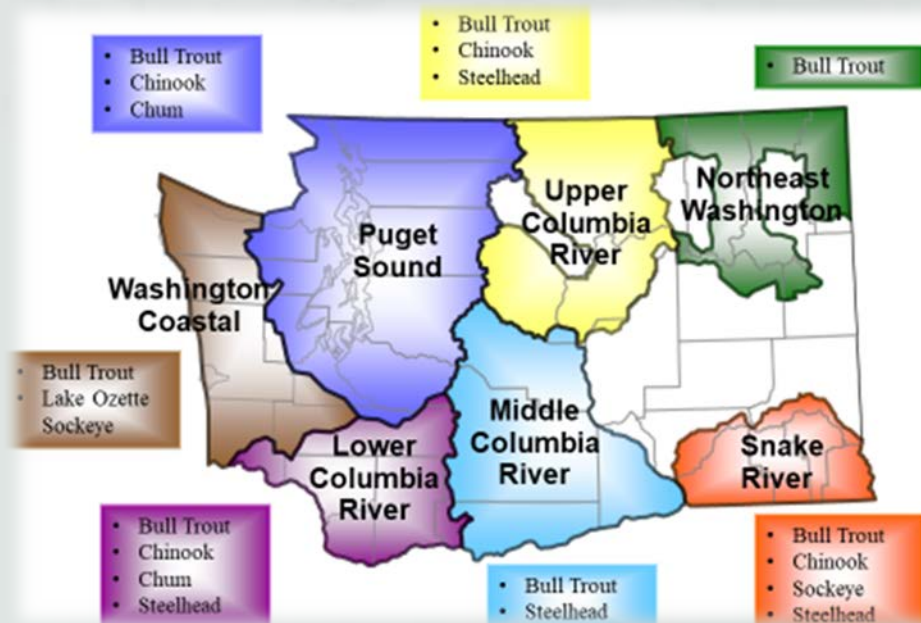
November 15, 1991

**“Sockeye Salmon Listed as Endangered Species”**

# Currently 15 Salmon and Steelhead Federally ESA Listed



- By late 1990's many more salmon and steelhead ESA listed across the West Coast
- Currently 15 ESA listed salmon and steelhead in Washington
- 45% of the populations, over 75% of the area in the state



# Washington's Response

*“Saving salmon is a stunningly ambitious goal, full of risks and replete with consequences we barely understand. But extinction is not an option, and it’s up to us to make the history we want for our children and our grandchildren.”*  
*Governor Gary Locke, October 9, 1998*



- 1999 Governor Locke and Joint Natural Resources Cabinet issued –

**Statewide Strategy to Recover Salmon:  
Extinction is Not An Option**

- 1998 Salmon Recovery Act (ESHB 2496)

Foundation for “The Washington Way”



# Washington's Salmon Recovery Act (ESHB 2496) Bottom Up Approach – “The Washington Way”



- Regional Recovery Organizations
  - Locally developed, federally approved recovery plans
- Lead Entity Watershed Groups
  - Prioritize and locally vet projects
- Salmon Recovery Funding Board
  - Fund the Projects
  - Federal PCSRF + State Capital Funds
- Project Sponsors
  - Put projects on the ground, do the work
- Governor's Salmon Recovery Office
  - Coordinate partners
  - Work with tribes
  - Secure federal and state commitments
  - Track progress towards recovery



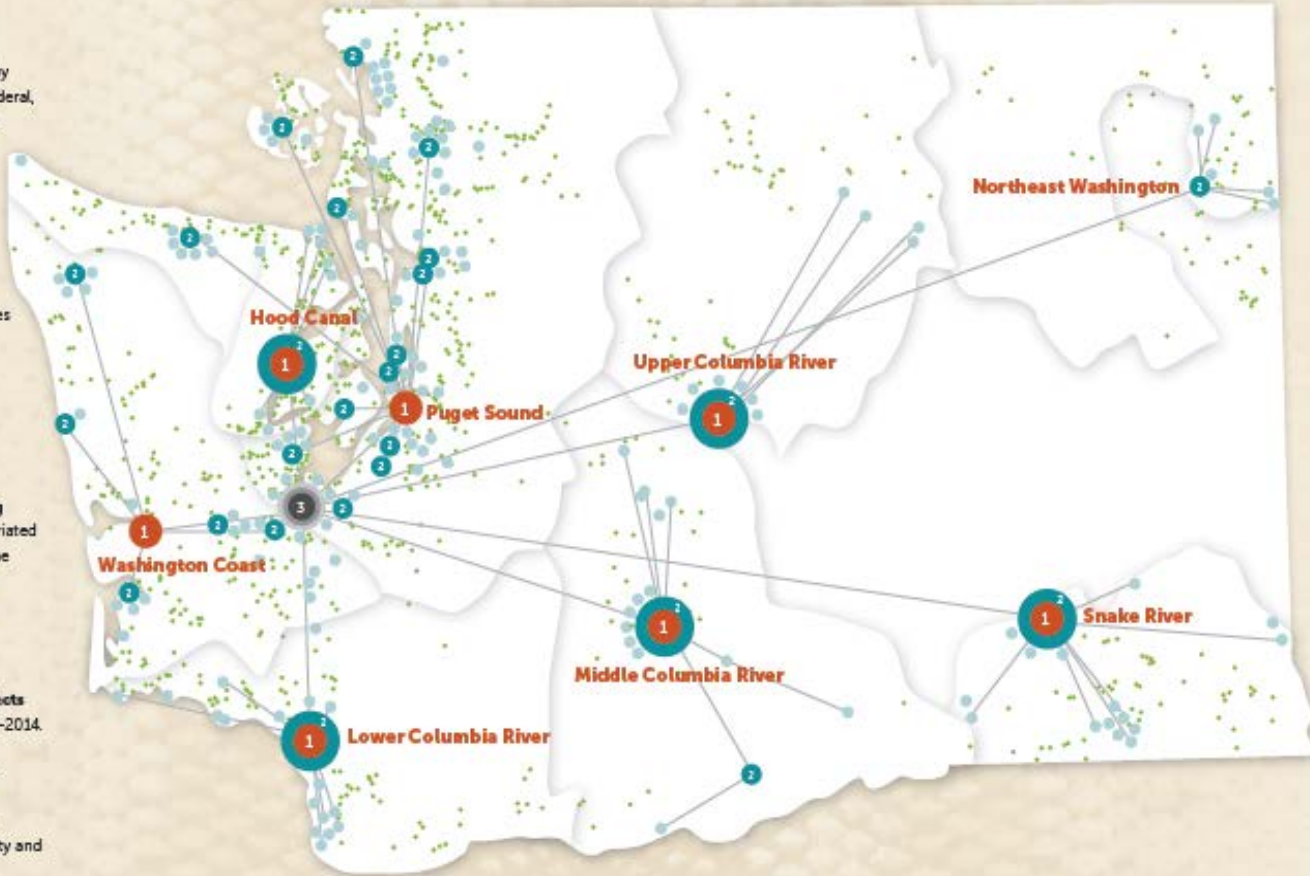
# Robust Salmon Recovery Network of Partners

## Salmon Connect Us

The Salmon Recovery Network is a coordinated and collaborative statewide network that empowers local communities to lead salmon recovery in their communities.



- 1 Regional Salmon Recovery Organizations** led by county and tribal leaders, and advised by scientists, citizens, and state, federal, and tribal agency staff, develop and guide implementation of plans to recover and sustain salmon and the habitats upon which they depend.
  - 2 Lead Entities** work at the local watershed scale with technical and citizen committees to prioritize funding to high priority projects.
  - 1 Regional Salmon Recovery Organizations** that are also Lead Entities
  - 3 The Salmon Recovery Funding Board** distributes funds appropriated by Congress and matched by the state of Washington to project implementers across the state.
- Implementer office location
  - On-the-ground recovery projects across Washington State, 2000–2014.
  - Washington's Recreation and Conservation Office and the Governor's Salmon Recovery Office ensure fiscal responsibility and statewide coordination.



**7,500 JOBS**  
New or sustained jobs salmon recovery funding supports annually

**\$763M**  
Total economic activity from salmon recovery

**16,374 JOBS**  
Estimated jobs recreational and commercial fisheries support annually

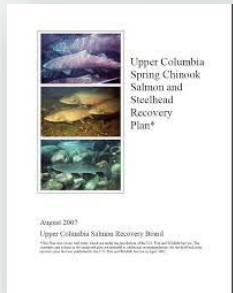
**\$540M**  
Personal income generated from recreational and commercial fisheries

**80%**  
of grant funding is spent in the county where the project is located.

IRCO, 2012

Washington's natural beauty and healthy ecosystems draw visitors and businesses, increasing economic prosperity across the state.

# Where We've Been...Where We're Headed



- Completed recovery plans
- Established all-H approach to recovery
- Established robust partnerships
- Addressed much of the low hanging fruit



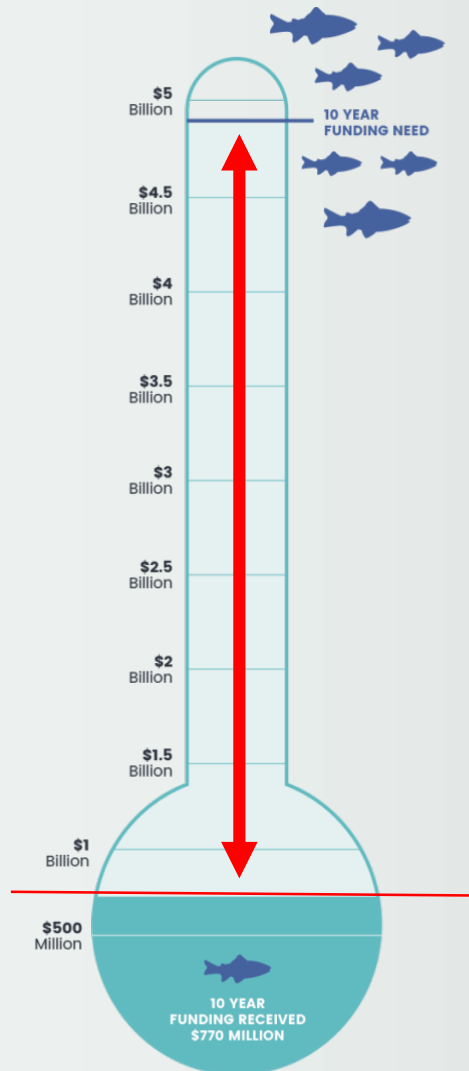
- Larger scale, more complex projects, requires increased commitment
- We need to leverage the investments we've made, in science, people, and places
- We are working more effectively across sectors
- We are reaching out to new salmon recovery partners

# Mounting Challenges, Need to Double Down



- Continued Habitat Loss
- Pollutants and Contaminants
- Climate Change & Warming Oceans
- Predation
- Invasive Species
- Orca Crisis
- Limited Funding and Resources

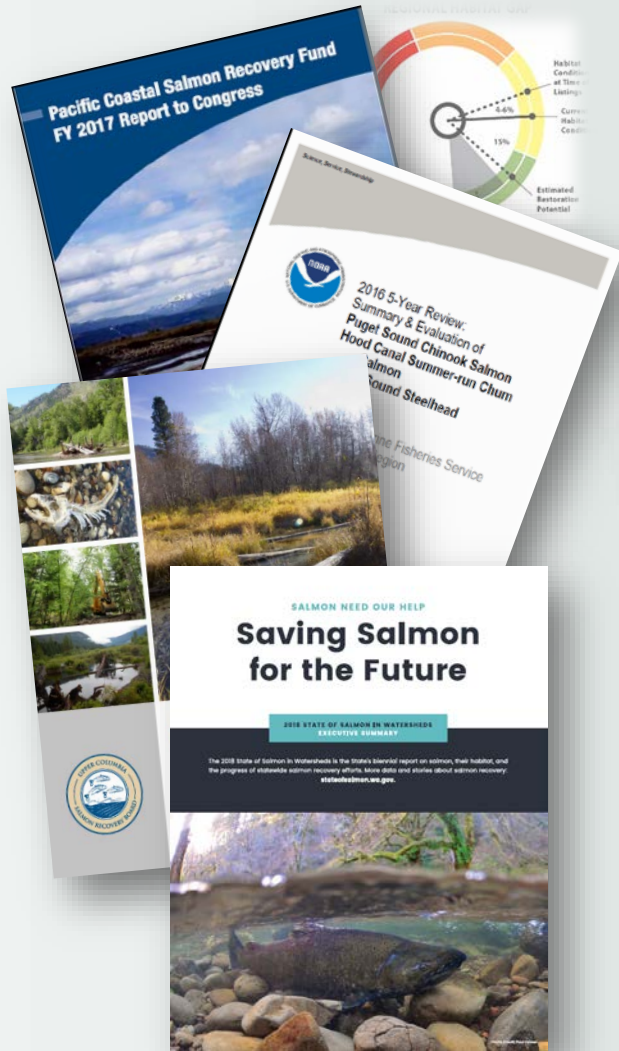
# Funding Only 15% of the Need for Salmon Recovery



## Some Key Funding Sources

- Pacific Coastal Salmon Recovery Funding (1999)
- Family Forest and Fish Protection Program (2005)
- Puget Sound Acquisition and Restoration Program (2007)
- Estuary and Salmon Restoration Program (2009)
- Flood Plains by Design (2013)
- Washington Coast Restoration and Resiliency Initiative (2015)
- Brian Abbott Fish Barrier Removal Board (2017)
- Streamflow Restoration Program (2017)

# Tracking Recovery Progress



- NOAA Report to Congress – Pacific Coastal Salmon Recovery Funds
- NOAA 5-Year Status Reviews
- Regional Recovery Progress Reports
- GSRO Biennial Report to the Legislature – State of Salmon Report

# State of Salmon Report

## Statewide Summary of Recovery Progress

BELOW GOAL (ENDANGERED SPECIES ACT-LISTED SALMON IN WASHINGTON)			NEAR GOAL
<i>Getting Worse</i>	<i>Not Making Progress</i>	<i>Showing Signs of Progress</i>	<i>Approaching Goal</i>
<p>Upper Columbia River Spring Chinook</p> <p>Puget Sound Chinook</p>	<p>Upper Columbia River Steelhead</p> <p>Lower Columbia River Chum</p> <p>Lower Columbia River Coho</p> <p>Lower Columbia River Fall Chinook</p> <p>Lower Columbia River Spring Chinook</p> <p>Snake River Spring and Summer Chinook</p>	<p>Mid-Columbia River Steelhead</p> <p>Lake Ozette Sockeye</p> <p>Lower Columbia River Steelhead</p> <p>Snake River Steelhead</p> <p>Puget Sound Steelhead*</p>	<p>Hood Canal Summer Chum</p> <p>Snake River Fall Chinook</p>

# Healthy Salmon, Healthy Washington



## Quality of Life

- Washingtonian's value salmon and the environment

## Restoration Projects Support Jobs

- Every \$1 million invested generates 16.7 jobs
- \$1 billion in total economic activity since 1999
- 80% of grant dollars stay local

## Fishing Enhances Local Economies

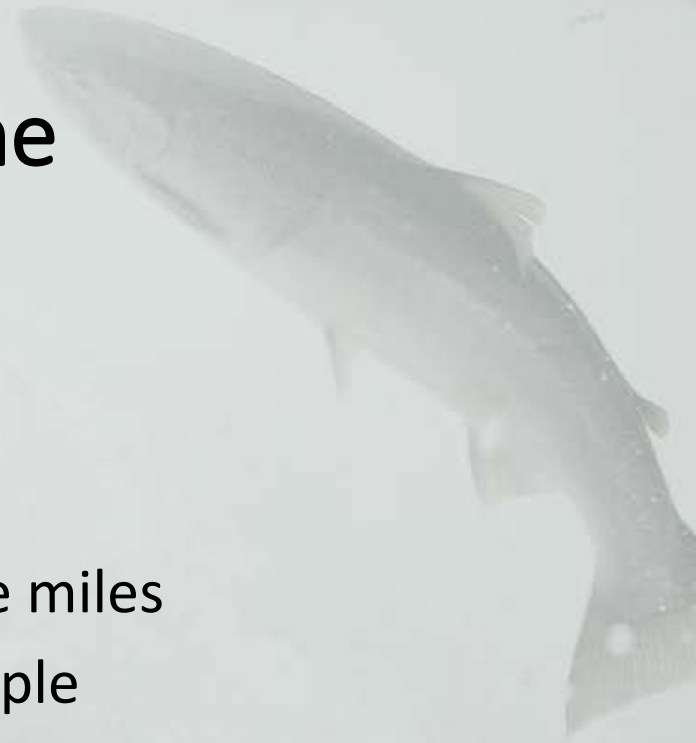
- Supports 16,374 jobs
- Over \$900 million on fishing related activities



# Unique Opportunity on the Washington Coast



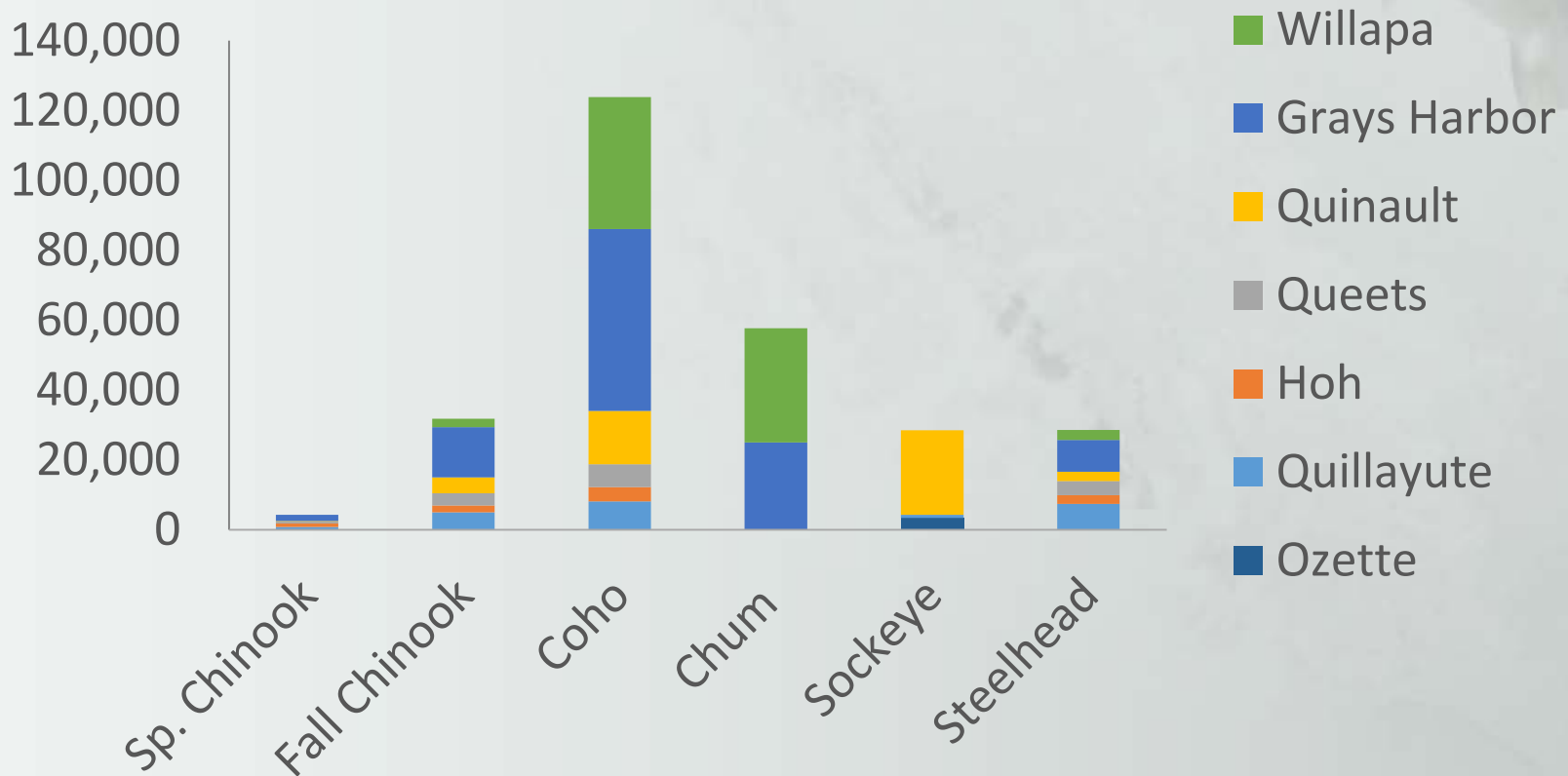
- 5,900 square miles
- 200,000 people
- 69% - 81% forested (per WRIA)
- 8 salmonid species
  - 118 populations
  - 2 ESA listed – Lake Ozette sockeye, bull trout



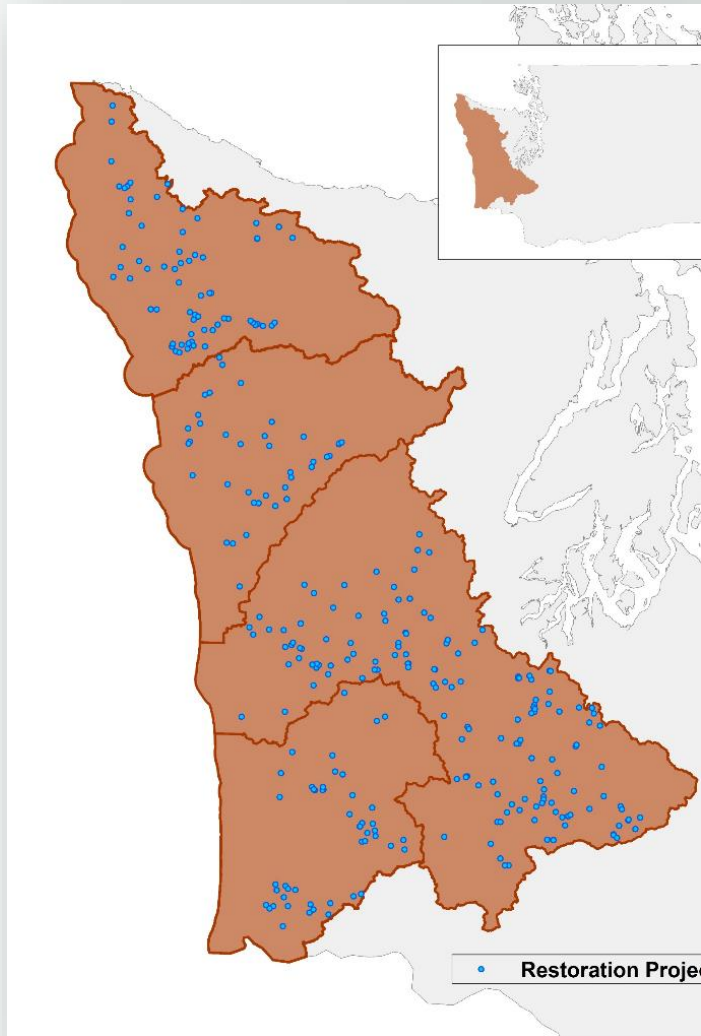
# Number of Salmon Spawning in Coastal Rivers

10 Year Average, 2008-2017

**Total Number of Fish ~ 275,000**



# Major Efforts to Open Up Access to Hundreds of Miles of Habitat



In the last 20 years...

- 300 funded SRFB projects
- 450 fish passage barriers corrected
- 750 miles of habitat opened

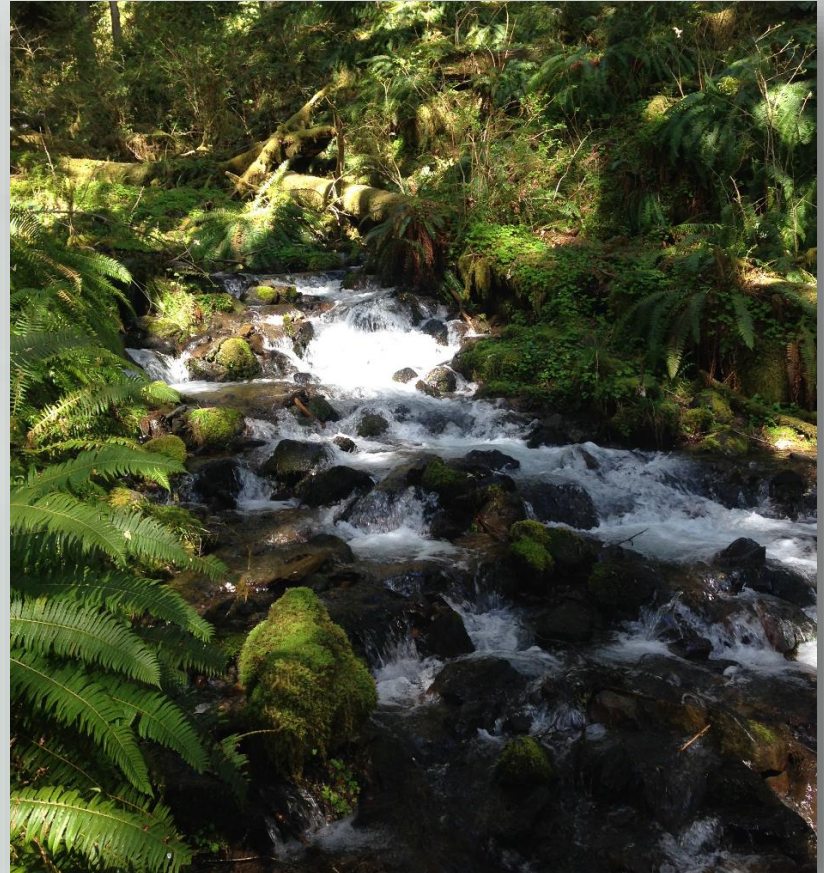
**Pacific Coastal Salmon Recovery Funds (Federal)**

**Salmon Recovery Funds (State)**

**WA Coast Restoration and Resiliency Initiative (2015)**

# Salmon Recovery on the Coast is Critically Important...

...It's Our Last Best Opportunity to Protect the Best of What Washington Has to Offer for Salmon and for People!





**Thank You**